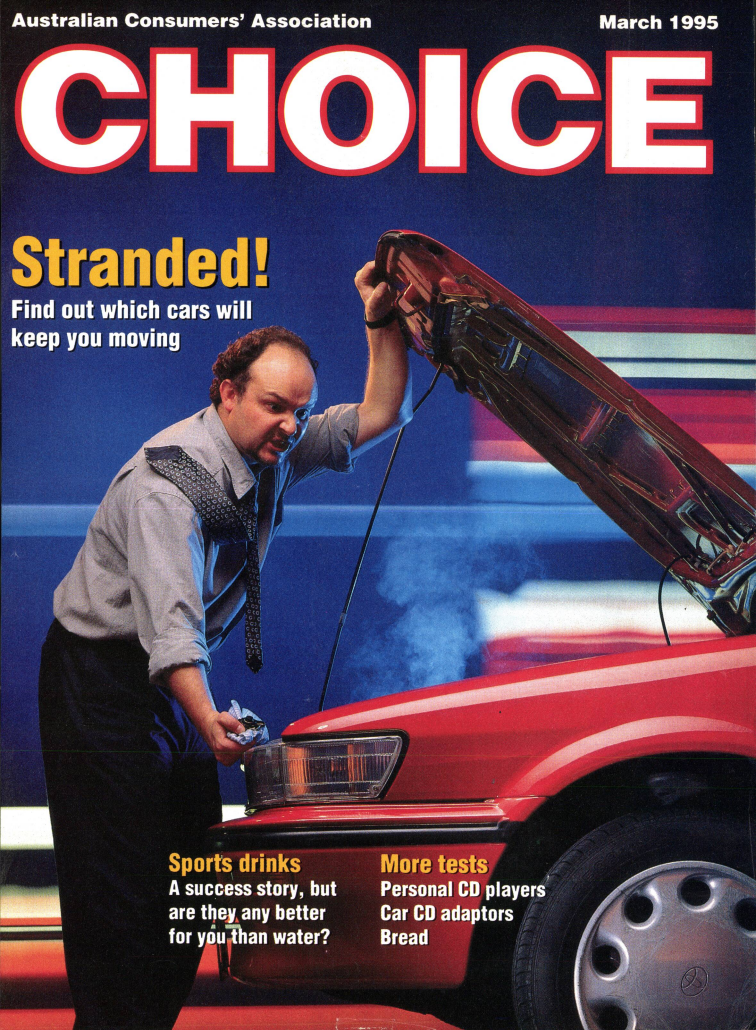
Australian Consumers' Association

March 1995

CHOICE

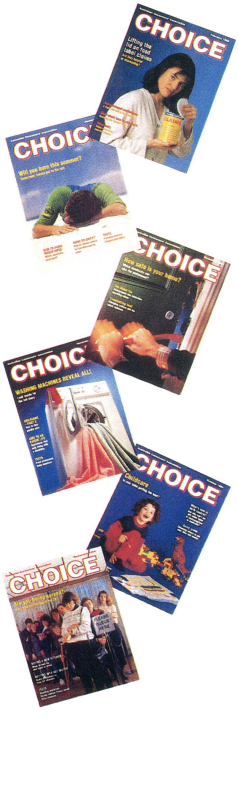


Stranded!

Find out which cars will keep you moving

Sports drinks
A success story, but are they any better for you than water?

More tests
Personal CD players
Car CD adaptors
Bread



About the Consumers' Association

The Australian Consumers' Association is a non-profit, non-party-political organisation established in 1959 to provide consumers with information and advice on goods, services, health and personal finances, and to help maintain and enhance the quality of life for consumers.

We are completely independent. We buy all the products we test on the open market. We are not beholden to any commercial, government or union interests, and we don't take outside advertisements. Our income is derived from the sale of CHOICE and our other publications and products.

We test and rate products and services. Our ratings are usually based on quality without regard to price, and are derived from lab tests, expert judgments and reader surveys. If a product is high in quality and relatively low in price, we deem it a Best Buy. A rating applies only to the brand and model tested, not to other models sold under the same brand name, unless so noted. We can't conduct special tests or provide information about tested products beyond what appears in CHOICE.

No commercial use policy. Our ratings and reports may not be used in advertising or for any other commercial purpose. The Consumers' Association will take all steps open to it to prevent commercial use of its materials, its name, and the name of CHOICE or our other publications. Please report any apparent violation to the Consumers' Association, 57 Carrington Road, Marrickville 2204; fax (02) 558 9341.

We represent and act in consumers' interests. We lobby and campaign on behalf of consumers to promote consumers' rights, to influence government policy, and to ensure consumer issues have a high profile in the public arena.

Membership. Paid subscribers can become voting members of the Consumers' Association on application. Membership costs $75 per year, which covers your subscription to CHOICE plus a further subscription to our consumer policy and campaigning magazine, *Consuming Interest*.

About CHOICE

CHOICE is published monthly by the Australian Consumers' Association.

Subscription rates. $48 for one year, $89 for two years; institutions $66 per year.

Subscription problems or changes of address. Write to Subscriptions Department, CHOICE, 57 Carrington Road, Marrickville 2204, phone (02) 558 8088 or fax (02) 559 3260. Please include your subscriber number (found in the top corner of your CHOICE address label) or have it ready by you when you phone us.

Back issues. Subscribers can buy back issues at the following rates: $6 for one copy, $10 for two, $13 for three, and $4 each after that. Non-subscribers can purchase back issues that are less than 12 months old for $16 per copy; more than 12 months old, $10. Write to Consumer Information Service, CHOICE, 57 Carrington Road, Marrickville 2204, or phone (02) 559 9855.

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Mailing lists. We never sell the CHOICE mailing list to other organisations. We also don't purchase mailing lists for marketing purposes from other organisations.

Other Consumers' Association products

Choice Books publishes non-fiction titles on a wide range of topics, with a consumer perspective.

Consumer Bookshelf offers both Choice Books and material from other publishers for sale by mail order.

Test Research provides fee-for-service testing and research on consumer products, services and regulatory issues for other consumer organisations, government and industry. For work to be accepted by Test Research, consumer benefit must be the primary outcome (for example, testing for energy labelling).

Consuming Interest, our quarterly policy and campaigning magazine, is published in February, May, August and November. It provides straight facts, probing analysis, in-depth reporting, informed opinion and stimulating debates. It also gives updates on the lobbying and campaign projects of the Consumers' Association.

CHOICE Travel. This magazine is produced by the UK Consumers' Association and reprinted by CHOICE four times a year. Its reports are independent in the same style as CHOICE and, while they're written from the perspective of a European base, most of the information in them is just as useful to travelling Australians.

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Cover photo: Kent Mears

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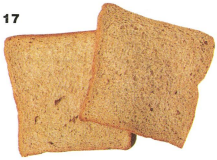

Next issue

CHOICE's 35th birthday!
Financial planners, children's car restraints, 51 cm TVs, dishwashers, eating kangaroo meat, lead — who is at risk?, how green is your home?

May, June, July

Tests: Overlockers, electric heaters, exterior paint, electric cooktops, film, video tapes, anti-scald devices for taps, 'lean' mince, vacuum cleaners, 500 L fridges, fax machines.

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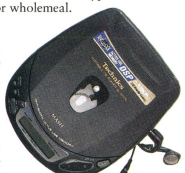

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These gadgets allow you to use a personal CD player to listen to your CDs in the car — they're nifty but not perfect.

41 Sports drinks: replenishing what hard work takes out
Michael Jordan drinks Gatorade for that deep-down body thirst, and Cathy Freeman uses Sportplus to recover from her races. At least that's what TV commercials want you to believe — but does the average exerciser really need a special drink to replace the fluids and energy lost during sport?

Prescription costs

DRUG COMPANIES CAMPAIGN AGAINST CONSUMER CHOICE

SOME pharmaceutical companies seem determined to undermine consumers' right to choose cheaper 'generic' brands of medication.

In the January issue of CHOICE we told you about new legislation enabling you to ask your pharmacist to substitute a less expensive (and therapeutically identical) generic brand of prescribed medication if one is available — unless your doctor has stipulated otherwise.

The Australian Pharmaceutical Manufacturers' Association (APMA) is campaigning vigorously against consumer choice. It has sent doctors a *Brand Substitution Not Permitted* stamp and placed full-page advertisements in medical journals urging doctors to tick the 'no substitution' box on prescriptions. A number of pharmaceutical companies have placed similar ads, no doubt encouraged by the fact that medical and pharmacy magazines are supporting the APMA campaign by publishing the ads free of charge for 12 months — that's estimated to be around $1 million of free advertising to encourage doctors to prescribe more expensive drugs.

According to the ads, unless the doctor ticks the *Brand Substitution Not Permitted* box, the choice of medication is left to the pharmacist. "It's your decision," Wyeth Australia ads tell doctors. Such ads ignore the wishes of consumers and go against the spirit of the new legislation, which was introduced to give people choice of brands and access to cheaper prescribed drugs. Doctors should discuss treatments and their costs with their patients and decisions should be made jointly.

We join the Australian Pensioners' and Superannuants' Federation in calling on the APMA and companies concerned to stop this commercially selfish advertising immediately.

Drive safely

SEXIST MOTORING

LATE LAST YEAR the Federal Office of Road Safety (FORS) released a report on the findings of an investigation into the differences in car crash statistics between men and women drivers. The report concentrated on fatal crashes and looked at differences between men and women in areas such as patterns of car usage, the risk of a fatal crash and the factors affecting the extent of injuries sustained in a crash.

In the past, analyses of driver behaviour have tended to concentrate on males. Forty-five years ago virtually all drivers killed were men. In 1970 women accounted for around 13% of all driver fatalities, while in recent years this figure has risen to between 22% and 27%. While a much higher percentage of drivers today are women compared with 25 years ago, men still account for around 65% of the total passenger vehicle kilometres travelled, and the report highlights some interesting differences in the way men and women use cars and the types of accident they're involved in.

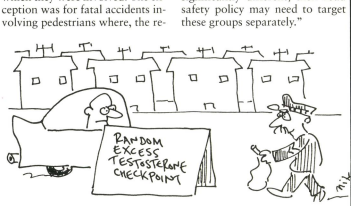
The report claims that while the incidence of non-fatal crashes is similar for men and women, on average men are 46% more likely to be involved in a fatal crash per kilometre travelled than women. This figure, however, decreases with age to the extent that for drivers over 45 the likelihood is approximately equal for men and women.

Men and women shared equally in the blame for fatal accidents in which they were involved. The exception was for fatal accidents involving pedestrians where, the report says, male drivers were more likely to be at fault than females.

One of the most marked differences highlighted in the report was the relatively small number of fatal accidents resulting from any obviously risky or negligent behaviour by women drivers. Overall, 43% of fatal crashes where a female driver was at fault had no obvious explanation, compared with 26% for crashes which were the fault of a male driver. The report concluded that difficult-to-measure factors such as driver inattention or misjudgment were dominant in explaining fatal crashes where a woman was at fault, whereas for men, deliberate risk-taking behaviour was a major factor. Men were also more likely to be associated with alcohol-related fatalities.

The report looked at many other areas, including differences in the types of car driven and journeys undertaken, but the overall finding that the sex of the driver has significant bearing on the cause of fatal crashes has implications for road safety strategies.

Between 1970 and 1990, fatality rates per head of the motoring population for male drivers steadily decreased by an average of 3.8% each year. In contrast, the rate for women has been increasing at around 0.5%. The report concludes that: "Female drivers now thus represent a significant minority of those involved in fatal road crashes. If the causes and characteristics of crashes involving male and female drivers are significantly different, then road safety policy may need to target these groups separately."



NOT WORTH THE PAPER

A GENERAL INSURANCE CODE OF Practice will come into force from July. According to Peter Daly, chief executive of the Insurance Council of Australia, "The self-regulatory code aims to raise the standards of practice and service in the insurance industry, for the benefit of customers.

"It was developed in anticipation of legislative changes to the Insurance Act 1973 that will require each authorised general insurance in Australia to adopt a code of practice approved by the Insurance and Superannuation Commissioner," Daly said.

The code will be implemented and administered by a company called Insurance Enquiries and Complaints Limited — the company currently responsible for administering the Insurance Council of Australia's Claims Review Panel Scheme, which deals with disagreements between general insurance companies and claimants. Companies who adopt the code will be required to participate in the Claims Review Panel Scheme.

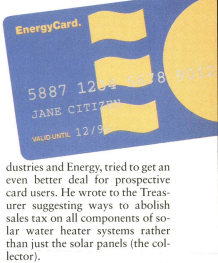
However, the Consumers' Association has argued that the Code of Practice is weak and doesn't really benefit consumers in any significant way. For instance, it won't be formally reviewed for two years after its implementation. The powers of the Claims

Review Panel are too narrow: the panel is unable to deal with consumer complaints that relate to privacy, discrimination, unfair sale practices or harassment by claim investigators.

We're also concerned that industry representatives involved in the administration of the code will have the power to veto any decision made to name a company that is found to be in breach of its conditions. This power would deny consumers of vital information about the conduct of companies they may be planning to enter major financial commitments with.

When choosing car, house and contents or travel insurance it remains essential to shop around — and use the reports regularly published in CHOICE that compare the insurance policies and the claims handling performance of the major insurance companies.

SOLAR ECLIPSE



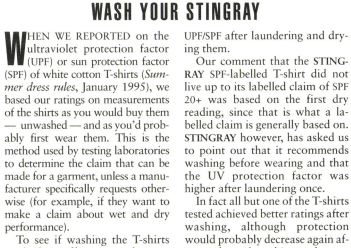
WHEN OUR January edition of CHOICE went to print with *The EnergyCard muscles in*, we expected the EnergyCard to have already been released amidst a great deal of media fanfare. However, hiccups delayed the anticipated release of the low-interest solar hot water system purchasing plan by a few months.

These hiccups, while irritating, are the result of a healthy economy, according to the Department of Primary Industries and Energy (DPIE). A number of the participating manufacturers were restructuring after a change in ownership, and card details had to be reworked.

The scheme organisers, the Macquarie Bank and DPIE, therefore decided to delay the launch of the card. As this edition of CHOICE was going to print, scheme participants were finalising the fine print of the contract and the scheme was expected to be available by March.

During the delay, Senator Bob Collins, Minister for Primary Industries and Energy, tried to get an even better deal for prospective card users. He wrote to the Treasurer suggesting ways to abolish sales tax on all components of solar water heater systems rather than just the solar panels (the collector).

This is something we advocated in *The EnergyCard muscles in*, since the sales tax creates a small purchasing barrier and a paradox. On the one hand consumers are being offered a good scheme, then being penalised with sales tax and the interest payments of around 9% pa on the sales tax component of the overall solar unit price. We hope the Treasurer and government listen to Senator Collins!



WASH YOUR STINGRAY

WHEN WE REPORTED on the ultraviolet protection factor (UPF) or sun protection factor (SPF) of white cotton T-shirts (*Summer dress rules*, January 1995), we based our ratings on measurements of the shirts as you would buy them — unwashed — and as you'd probably first wear them. This is the method used by testing laboratories to determine the claim that can be made for a garment, unless a manufacturer specifically requests otherwise (for example, if they want to make a claim about wet and dry performance).

To see if washing the T-shirts made them offer more or less sun protection, we also measured their UPF/SPF after laundering and drying them.

Our comment that the STINGRAY SPF-labelled T-shirt did not live up to its labelled claim of SPF 20+ was based on the first dry reading, since that is what a labelled claim is generally based on. STINGRAY however, has asked us to point out that it recommends washing before wearing and that the UV protection factor was higher after laundering once.

In fact all but one of the T-shirts tested achieved better ratings after washing, although protection would probably decrease again after prolonged washing and wearing.

Updates

RIGHT AT HOME

CHOICE, January 1995

The South Australian Department for Family and Community Services has informed us of a single contact number for its Seniors Information Service, which is a new information service that brings together the previous Ageline, the Nursing Homes and Hostel Enquiry Service and the Housing Options Service.

■ Seniors Information Service, 3rd Floor, 45 Flinders Street, Adelaide 5000; phone (08) 232 1441, toll-free 1800 636 368; fax (08) 232 0433.

THE PRICE OF JUSTICE

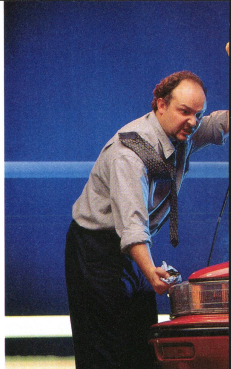
CHOICE, January 1995

Following our *Consumer-in-law* article on the introduction of contingency fees, the Law Society of NSW has asked us to make our NSW readers aware of two aids to their access to justice:

■ **Pro bono scheme:** The Law Society co-ordinates the provision of legal services, in matters of public interest, for no fee or a substantially reduced fee to people who would otherwise be unable to defend their lawful rights.

■ **Free initial consultation:** It is common practice in NSW for solicitors to provide a free initial consultation, particularly in personal injury matters. The Law Society recommends that you look at solicitors' advertising and/or telephone a number of solicitors to find one who will do this.

Can you rely on your car?



Our annual car reliability survey tells you which makes and models have performed without a hitch and which ones have left their owners going nowhere during the last year.

AUSTRALIANS RELY HEAVILY ON their cars. A 1993 census of motor vehicles estimated that there are six vehicles registered for every 10 people in Australia, and over 80% of these are passenger vehicles.

This means even a simple problem that leaves you off the road for any length of time is very frustrating — reliability is an important factor in the list of things that make a 'good' car.

We wanted to find out which makes and models were more or less likely to leave you stranded, so late last year we sent out a questionnaire asking motorists how many times their car had broken down or been unavailable for use in the previous 12 months. Figures 1 and 2 on page 8 list the makes and models for which we have information in order of their reliability.

Local vs imported

As in previous years, the survey found fully imported models tended to be more reliable than those manufactured or assembled in Australia. Comparing cars in the newest 1991 to 1993 age group, we found only 4.4% of fully imported cars had spent unscheduled time off the road, compared with 10% of those with some local content.

The local models tended to have travelled slightly further during the previous year and were more likely to be fleet cars. These factors have an effect on reliability, but even accounting for this the difference is still significant. Australian manufacturers and assemblers still need to lift their game to compete with the general reliability of fully imported models.

The problems with cars

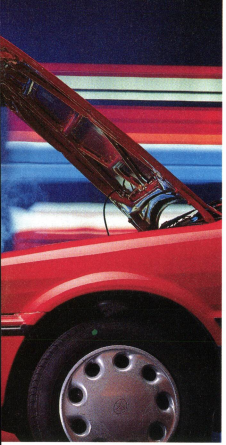
The survey also asked questions about specific problem areas in cars. We asked the survey participants to detail any problems they'd had with their car over the survey period, and analysed the results to find out if any problems particularly affected any makes or models.

A 'problem' is when something stops working or isn't working the way it should. Some problems can cause or lead to a breakdown. Others, such as an electric window which gets stuck, may be annoying but still leave the car safe to drive.

Figure 3 on page 9 gives a detailed list of the problem areas and the cars which suffered significantly more or less in these areas. If you're in the market for a used car you can use this table to get an idea of the likely problem areas in the models you're looking at.

Two cars in the survey are notable for having more problems than average in a whole host of areas. The FORD Falcon 6 had problems with engine cooling, steering and suspension in all age groups and several other problem areas were significant for the same car at various ages. The HOLDEN Commodore V6 models between 1988 and 1990 had significantly more than the average number of problems in eight separate areas.

While these two cars showed up as having significantly more problems in many areas, they may not be the only ones. There may be other models which also have a lot of problems, but we didn't have enough in our survey to accurately



The survey

Our definition of a reliable car is one which works whenever you need it. Which cars live up to this ideal?

report on. For those listed in Figure 3, the numbers were sufficient for us to praise or criticise confidently.

Common faults

Not surprisingly, problems in most areas tended to increase with the age of the cars. The following is a summary of the most common problem areas overall.

■ **Body exterior:** This included paintwork, glass, mirrors, locks, leaks, etc, and caused a large percentage of the problems reported in all age groups. It was the biggest problem area in the newest 1991 to 1993 group.

■ **'Other' electrical problems:** This category was for electrical problems other than those related to the ignition system, such as lights, radio, wipers, etc. It was the major cause of problems with our oldest group of cars from 1985 to 1987, but was also a common problem in the other age groups.

■ **Brake problems:** For 1988 to 1990 cars, faults with the braking system were the most commonly reported problem. Cars in the older age group also had a large incidence of brake problems, but for 1991 to 1993 cars it was less of a worry.

The areas causing the fewest problems overall were the **manual transmission** and **driveline** (driveshaft, universal joints, wheel bearings, etc).

IN AUGUST LAST YEAR WE SENT survey forms to 30,000 subscribers and 12,000 non-subscribers; from these we received useful information on 6731 cars. In our questionnaires we asked motorists to tell us how many times their car had broken down (that is, the car could not be driven at all or not driven safely) and how many times it had been unavailable for use for at least one day due to repairs in the previous 12 months. We specifically excluded breakdowns or repairs which were the result of an accident, regular maintenance or vandalism.

The results

Cars generally get less reliable as they get older. To make valid comparisons we separated them into three age groups: 1985 to 1987, 1988 to 1990 and 1991 to 1993. In this year's survey we excluded cars made prior to 1985; with older cars, their general condition and the level of maintenance starts to play a major role in reliability, so we've focused on cars made in the last 10 years.

Not all makes or models available in Australia appear in our results. To be able to draw any firm conclusions about a car we need a reasonable number of reports on that particular make or model. If a brand or model doesn't appear in our results tables it's because we didn't get enough responses to be able to report on it.

Figure 1 on page 8 compares the various makes (Honda, Ford, etc), while Figure 2 gives a breakdown of particular models (Honda Civic, Ford Falcon, etc). Both of these tables show '% without problems'. This gives the actual percentage of cars in our survey of the particular make or model which didn't break down and needed no repairs during the entire year, other than regular maintenance or crash repairs.

Included on the graphs in this column is a bar, which is measure of how closely the survey result is likely to mirror the real world. In any survey where only a sample of the entire population is used, there is some uncertainty about how representative the result is. The black bars indicate the uncertainty in our results — they show the likely variation from the survey result we'd find if we surveyed every car on the road. The shorter the bar, the more likely our survey result will be representative of all cars of that make or model. Generally, the more responses we got for a particular car, the more closely our survey is likely to match the real situation.

We also asked our respondents whether they would buy the same model of car again. We've totalled the results across age groups for models which haven't significantly changed over the years, and the overall percentages of people who said they'd buy the same model again are shown in Figure 4. Reliability isn't the only reason people consider buying the same car again, but our results showed a reasonable correlation between the two and indicate which models motorists were happy with. If safety is of major concern to you, see *Drivelines: How to choose a safer new car* on page 22.

The cars reported on in our survey were compared with the 1993 Australian motor vehicle census and were found to be generally comparable to the whole car population in terms of the spread of makes and ages.

We also compared the type of people who responded to the survey with the NSW Roads and Traffic Authority averages for car registrants and Australian Bureau of Statistics figures, and found our survey participants to be fairly representative, with a similar distribution of age, sex, income and location to that of the car-driving and general population. This means our results aren't biased by the nature of the people responding to the survey.

RELIABILITY BY MAKE AND MODEL

The percentages shown in Figures 1 and 2 relate to the number of cars of the particular make or model in our survey that didn't break down or need repair. The black bars indicate how close our survey result is likely to be to reality if we were able to survey all cars on the road. Statistically, the more cars for which we had information for each make or model and the closer they got to 100% without breakdowns or repairs, the closer to reality the percentage that our survey found is likely to be. The bar is therefore shorter.

When comparing the cars for reliability it's important to look at these bars. As an example, if we compare the 1988 to 1990 makes, the percentage without breakdown in our survey for **MAZDA** was higher than for **SUBARU**, but because the 'reality' bars for these makes overlap each other we can't say definitely that **MAZDA** is more reliable than **SUBARU** overall. On the other hand, if we compare **MAZDA** to **TOYOTA**, the bars don't overlap so we can say with confidence that **MAZDA** is more reliable. The same goes for comparing models.

Figure 1

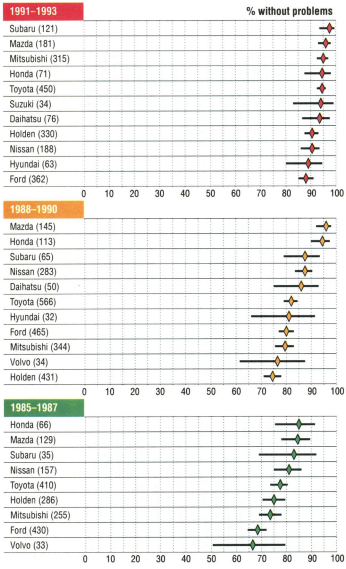
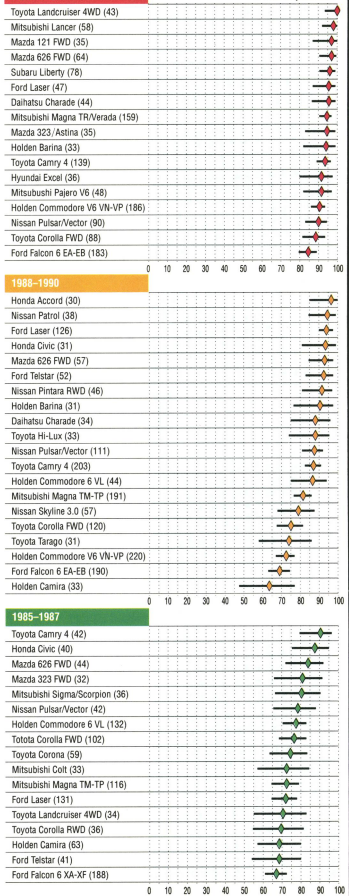


Figure 2



PROBLEM AREAS

Use this table when you're buying a secondhand car, to find out in which areas cars of a particular age are likely to have problems, and which models are more or less likely to suffer from these problems.

The percentage column relates to the number of cars in our survey that were reported to have a problem in the specified area. The models listed are those with significantly more or less than the average number of problems in that area. The number in brackets next to the model name is the percentage of cars of that model in our survey which reported a problem in the specified area.

For example, in the 1985 to 1987 age group steering problems were reported with 20% of all cars surveyed. The **HONDA Civic**, however, was significantly better than this, with only 2.5% of this model having steering problems. In contrast, 34.6% of **FORD Falcon 6 XA-XF** reported steering problems.

Figure 3

1991–1993	%	Fewer than average	More than average
Body exterior	14.1		Ford Falcon 6 EA-EB (22.4%)
Other electrical*	12.9		Ford Falcon 6 EA-EB (20.8%)
Steering	10.4		Ford Falcon 6 EA-EB (25.1%)
Brakes	9.8		Holden Commodore V6 VN-VP (21%)
Body interior	9.2		Mitsubishi Magna TR/Verada (17.6%)
Ignition	5.3		Ford Falcon 6 EA-EB (10.4%)
Clutch	4.8		
Manual transmission	4.6		
Suspension	4.2		Ford Falcon 6 EA-EB (13.7%)
Auto transmission	4.0		Ford Falcon 6 EA-EB (9.5%)
Engine mechanical	3.8		Ford Falcon 6 EA-EB (9.8%)
Engine cooling	2.7		Ford Falcon 6 EA-EB (11.5%)
Exhaust	2.2		
Driveline	1.7		
Rust	1.0		

1988–1990			
Brakes	19.2		Ford Falcon 6 EA-EB (30%)
Steering	17.8	Mazda 626 FWD (1.8%)	Holden Commodore V6 VN-VP (34.1%) Ford Falcon 6 EA-EB (28.9%)
Other electrical*	17.6		Mitsubishi Magna TM-TP (34.6%)
Body exterior	17.3		
Exhaust	14.8	Mazda 626 FWD (0%) Ford Laser (4%)	Holden Commodore V6 VN-VP (24.5%)
Ignition	11.3		Toyota Corolla FWD (20.8%) Holden Commodore V6 VN-VP (18.6%)
Body interior	10.5		Holden Commodore V6 VN-VP (25.9%)
Clutch	9.8		
Engine mechanical	9.4		Ford Falcon 6 EA-EB (18.4%) Holden Commodore V6 VN-VP (18.2%)
Engine cooling	9.2	Ford Laser (2.4%) Toyota Camry 4 (3%)	Ford Falcon 6 EA-EB (27.4%) Holden Commodore 6 VL (25%) Holden Commodore V6 VN-VP (17.7%)
Suspension	8.0		Ford Falcon 6 EA-EB (20%) Holden Commodore V6 VN-VP (14.1%)
Auto transmission	7.2		Ford Falcon 6 EA-EB (15.5%)
Rust	5.9		Holden Commodore V6 VN-VP (10.9%)
Driveline	4.3		Nissan Skyline 3.0 (21.1%)
Manual transmission	3.4		

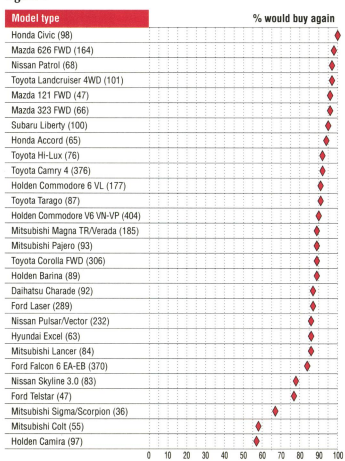
1985–1987	%	Fewer than average	More than average
Other electrical*	23.9		
Brakes	23.6		
Body exterior	22.8		Ford Falcon 6 XA-XF (33.5%)
Exhaust	22.4	Mazda 323 FWD (0%)	
Steering	20.0	Honda Civic (2.5%)	Ford Falcon 6 XA-XF (34.6%)
Engine mechanical	18.6	Mazda 323 FWD (0%) Honda Civic (2.5%) Holden Commodore 6 VL (6.8%)	
Engine cooling	17.9		Toyota Landcruiser 4WD (41.2%) Ford Falcon 6 XA-XF (35.1%) Toyota Corona (33.9%)
Clutch	16.3		
Rust	15.7		Mitsubishi Magna TM-TP (30.2%) Holden Commodore 6 VL (28.8%)
Ignition	14.4		
Suspension	12.5	Toyota Corolla FWD (2.9%)	Ford Falcon 6 XA-XF (27.7%)
Body interior	12.2		
Auto transmission	10.7		Mitsubishi Magna TM-TP (21.3%)
Driveline	8.6		
Manual transmission	4.6		

* Electrical problems not related to the ignition system.
FWD: front-wheel drive RWD: rear-wheel drive 4WD: four wheel drive

BUYING THE SAME MODEL AGAIN

We asked the people in our survey whether they would consider buying the same model of car again. We've added the results from all age groups where the essential mechanical design of the car hasn't changed over the years.

Figure 4



Choosing a car

IF YOU'RE THINKING OF BUYING A CAR, THESE ARE KEY points you need to consider.

New or secondhand

Obviously a new car ought to be more reliable and last longer, but for that privilege you pay more. If you don't do a lot of kilometres each year (say, less than 12,000), a used car may give you good service. If you're likely to travel a lot (say, over 20,000 km each year), you will soon use up a secondhand car's life.

New cars have a warranty from the maker and this may protect you for up to three years or 100,000 km. If you want to avoid any dispute over the warranty you might decide to pay more to get the car serviced by an authorised dealer — though you don't have to do this, except to get a warranty repair done. Secondhand cars bought from a dealer may have a short warranty — check your state or territory consumer affairs department or motoring club for details.

If you're buying a new car and are interested in the latest safety features, see *Drivelines: How to choose a safer new car* on page 22.

Type of car

Think carefully about what you'll use a car for. Buying something bigger or smaller than you really need could end up wasting your money. Hauling around more car than necessary costs you more money to buy, run and maintain it; trying to do too much with a car that's too small can cost you in wear and tear and depreciation.

- Do you really need room for three big footballers in the back seat? Do you often tow something big? You may be able to borrow or rent something bigger more cheaply for the odd occasion you have to move lots of people or tow a big trailer. It costs $400+ per year in petrol alone if you choose a big six instead of a smaller four-cylinder car.
- Do you need to heave bulky things in and out easily and often? If so, consider a hatchback or station wagon, but be conscious of potentially riskier load carrying — fit a strong barrier if you'll be putting heavy things in.
- Will you have to deal with slippery roads regularly? 4WD is nice if you have to handle mud or snow often — even essential — but it costs more to buy and maybe more to maintain.
- Will you be mostly in traffic or cruising on the open road? These days automatic transmissions give good performance even in small cars, but they do use a bit more fuel.

Reliability

How important is it to you not to be let down or be without your car when you need it? How much are you prepared to trade off reliability for other features, such as size, performance and comfort? Read our guides to which models are more likely not to let you down, on page 8 and right — some rarely do, with others you've got about a one in three chance of a breakdown each year!

Durability

How long do you want it to last? Depending on how you drive and where, you might expect smaller cars to be reasonably useful up to 15 years old and 150,000 to 200,000 km; bigger cars may go on for 300,000 or more km. Check our problems guide on page 9 for models that have significantly more problems than others in various areas.

Where to buy

If you buy secondhand you need to check that the person selling has legal title to do so. Dealers should have this automatically in all states, as should a public auction, but street markets and private sales are a risk — ring your local service (REVS or VSR) to get advice on whether the car has money owing on it or has been reported as stolen. The other issue is that you may pay more for the car at a dealer to cover potential warranty costs.

Roadworthiness

You should check that a secondhand car is roadworthy (it may be compulsory for the seller to demonstrate this in your state) and you need to check the general condition; any roadworthiness problems should show up at the same time — see *Buying a used car – what to look for,* right.

PROBLEM AREAS AND CARS

- Our latest reliability survey results suggest problem areas to look for in popular secondhand cars. **Electrical problems** and **brakes** stand out for older cars, but no model is worse (or better) than average, so pay careful attention to the condition of all models over five years old.
- **Ford Falcon 6:** Weaknesses in steering and suspension for most years; brakes on models about five years old; engine cooling in older models; electrical faults in more recent models; and exterior body faults in more recent and older models.
- **Holden Commodore 6:** Worse than average rust and engine cooling problems in older (VL) models; steering, exhaust and body interior problems in models around five years old; and brakes on those just two or three years old.
- **Mitsubishi Magna 4:** Automatic transmission and rust on early models; electrical faults in models around five years old.
- **Toyota Landcruiser:** Older (around 10 years old) models were worse than average for engine cooling faults.
- **Ford Laser, Mazda 323, Mazda 626, Honda Civic and Toyota Camry** are less likely to exhibit problems than other cars and show up as better than average on a number of common faults.

Buying a used car – what to look for

UNLESS YOU HAVE A TAME MECHANIC ON HAND WE'D recommend you get your prospective car checked by your local motoring association before you buy. However, it would be too expensive to get them to inspect every car you want to look at, so you'll have to do basic inspections yourself. Make sure they're done to your satisfaction. Don't let the seller take you around the car just pointing out the good things.

An inspection should be done in good light, preferably daylight so you don't miss anything. Start outside the car, work your way in and then give it a test drive. The National Roads and Motorists Association (NRMA) recommends you check the following points:

1 Inspect all the body panels for signs of rust or accident damage. Look for paint bubbles, paint that doesn't match or panels that don't seem to fit properly. If you think body filler may have been used on the panels, a fridge magnet is a good way to test it out (it won't stick to filler).

2 Kicking tyres won't tell you anything, but you should check them for signs of wear on the tread, particularly uneven wear, which indicates a problem with the steering or suspension. While you're down there look on the ground beneath the car for any signs of oil leaks.

3 Look under the mats in the boot for signs of rust. Check the toolkit and jack are in place and have a look at the tread on the spare tyre while you have the boot open. Make sure the boot closes firmly.

4 Make sure all the doors and windows open and close properly as well. Check under the carpets in the car for rust. Make sure the seatbelts are in good condition (unfrayed and unfaded) and the seats are well anchored and comfortable enough.

5 Open the bonnet and look at the condition of the engine and the battery. If they're very dirty it's a sign the car has been poorly maintained. Of course if they're spotless it's a sign the engine's just been cleaned and doesn't tell you anything.

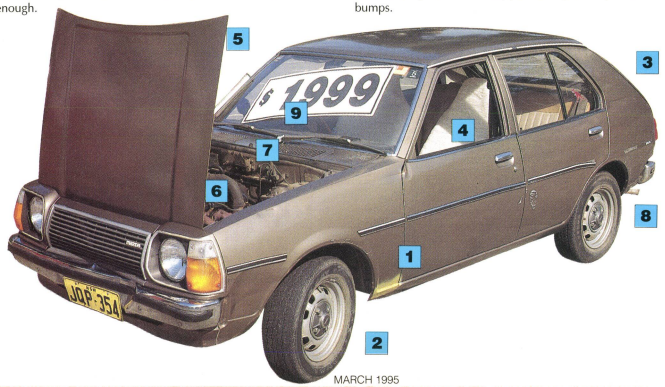
6 Take the radiator cap off and look at the colour of the coolant; it should be clean and brightly coloured. Look at the dipstick. If the oil's a grey or milky colour this indicates a serious problem.

7 The compliance plate is usually on the firewall (between the engine area and the inside of the car). It will tell you the date of manufacture and the chassis number of the car. Check these match what's written on the registration papers. Check the engine number (marked on the engine itself) corresponds as well.

8 Leave the bonnet up and start the engine. Take another walk around the car. Look for smoky exhaust (blue or white smoke signifies a serious problem) and any leaks from the engine. Listen to the engine. The sound should be even, with no unusual noises.

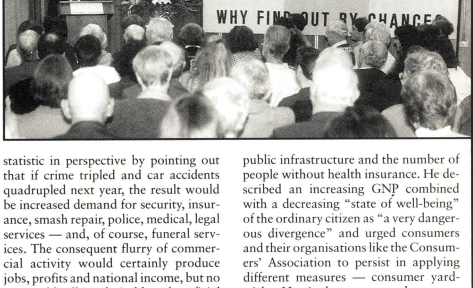
9 Take it for a drive on quiet roads so you can put it through its paces without worrying about other traffic. Try out all the accessories (air conditioning, horn, lights, radio, windscreen wipers, etc) at some time during the test drive. Keep an eye out for any warning lights on the dashboard (oil pressure, charging system, etc) as well.

10 Try out the brakes a number of times in succession. Make sure they feel firm and don't pull to one side. Relax your grip on the steering and see if the car pulls to one side or not. Listen for any unusual noises, particularly when you drive over bumps.



Nader in the nineties: civic society or the rule of commerce?

Legendary consumer advocate Ralph Nader made a flying visit last October to Australia, including the Consumers' Association's Sydney headquarters. He told a public meeting there that plenty of battles remain to be fought in the consumer movement's struggle to ensure that fairness, improved living standards, a cleaner, safer environment and the values of "a civic society" continue to count in an increasingly commercial world.



RALPH NADER HAS ALWAYS BEEN A MAN WITH A message and he delivered it once again to Australia in October. In his address to a well attended meeting at the Consumers' Association, as well as in a welter of other speeches and media appearances, he outlined what he believes are the big issues facing the consumer movement as we approach the turn of the century.

One of Nader's most important themes was the growing dominance of commercial values over all other kinds, including those that contribute to our living standards in ways not easily quantified and which are less and less featured in the public debate.

He began his speech by alerting the audience to the trap in many of the commonplace measurements of economic 'progress' such as gross domestic product (GDP). Nader put this kind of statistic in perspective by pointing out that if crime tripled and car accidents quadrupled next year, the result would be increased demand for security, insurance, smash repair, police, medical, legal services — and, of course, funeral services. The consequent flurry of commercial activity would certainly produce jobs, profits and national income, but no one could call it a desirable or beneficial development unless it was disguised in the form of a "symbolic number": some percentage figure of economic growth over the previous year.

He also warned of "an increasing divergence between the overall growth of the economy and the well-being of people". Australia now faces a predicament whereby it has a growing number of jobs and simultaneous high unemployment — a trend Nader traces to a big increase in very poorly paid jobs. He said this is "very much the problem" in the US, illustrating the point with the tale of a 'man in the street' who, when told by a TV reporter of President Clinton's boast that the US economy had recently created four million jobs, said, "Gee, that's great. I've got five of them."

Nader said the gross national product (GNP) per head of population in the US has doubled in real terms since the 1960s, yet no one could pretend the living standards of most Americans had done likewise. On the contrary, they have declined, especially if judged by measures such as the levels of homelessness, the decline in real wages since 1993, crime, poverty, disintegrating public infrastructure and the number of people without health insurance. He described an increasing GNP combined with a decreasing "state of well-being" of the ordinary citizen as "a very dangerous divergence" and urged consumers and their organisations like the Consumers' Association to persist in applying different measures — consumer yardsticks. He cited as an example our annual rating of Australian consumer affairs ministers in our policy magazine, *Consuming Interest*, based on how well they perform *for consumers*, rather than the usual ministerial assessments more concerned with political nous or career pragmatism.

Beyond the issue of measurements, Nader said the fundamental question that needs to be asked today is "do we have a civic society or a commercial society?". A commercial economy is always necessary, he said, but for it to be part of a "broader civic context" it needs to be disciplined, accountable to the public and it must be made to deliver a higher, not deteriorating, quality of life to its citizens.

Instead, Nader maintained we have seen the rise of "commerce *über alles*" around the world in recent decades. This has dominated all other concerns and enforced a "commercial value system", which Nader described as "the most aggressive, the most over-riding, the most shameless juggernaut of power against all other value systems", including those associated with health, safety, democracy, equality of opportunity and the

right to information. This, he said, is exemplified by the commercialism sweeping US schools and universities. Many American children are now a "captive audience" to TV advertising *in the classroom*, as schools are tempted by the offer of free equipment to subscribe to a cable TV service that shows 10 minutes of 'kid-style' news followed by two minutes of "cola and underarm deodorant" ads.

"The commercial value system is ... the most aggressive ... juggernaut of power against all other value systems, including those associated with health, safety, democracy, equality of opportunity and the right to information."

Ill-gotten GATT

Nader singled out the recently concluded General Agreement on Tariffs and Trade (GATT) and the new World Trade Organisation (WTO) arising from it for his most scathing criticism. Describing it as "this malicious system of international autocratic government", he said the GATT had the effect of subordinating non-trade living standards to "the dictates of international trade". The WTO would be "a system of secret tribunals" whose hearings in Geneva will be closed: no press coverage allowed, no civic participation, no public transcript, no independent appeal, "and the judges are three trade specialists who are allowed to pursue simultaneous business careers with no conflict of interest standard".

Nader said countries found to be in breach of sections of the agreement covering "non-tariff trade barriers", for instance by having laws banning the importation of products made by "brutalised child labour", could be brought before these tribunals and fined or made to repeal the laws. This could happen at the behest of transnational corporations applying pressure through the WTO. It is likely to happen, Nader said, to countries that had "more humane standards" and strong laws regulating areas such as health, safety, working conditions and pollution.

The US has already come off worst from two tribunal hearings against Mexico and the European Economic Community under the old GATT. Its mammal protection laws, which banned the import of tuna caught with environmentally disastrous drift nets, were found to be in breach. Under the old GATT, Nader said, at least the US had the option of refusing to comply in such a case. Under the new agreement, "we have to pay or obey".

Democracy, Nader said, is "the greatest mechanism for equitable economic development ever devised", so any international trade agreement should be judged according to whether it ultimately damages our democracies. He said the new GATT also contains "the hypocrisy" of furthering protectionism for intellectual property rights and extending patent limits from those currently existing in many countries, with the result that, by some estimates, the price of medicines will rise by 400% in some third world countries, for example.

More theory needed

Nader went on to call on the consumer movement to develop "a more comprehensive economic philosophy" and a wider theoretical and analytical base. He said consumer groups have traditionally been good at empirical work — "documenting vehicle defects, flammable fabrics and contaminated food ..." — but this has led them to "eschew the theoretical". If they are to challenge the prevailing "corporate-dominated society", they need first to develop a sound "corporate critique" and make it popularly understood.

Nader said corporations, which he described as "legal fictions", had an unfair balance of rights compared to individuals: "all the rights ... [of] human beings and ... privileges and immunities and perpetuities that human beings can never attain". They can create their own parents, for example, in the form of holding companies, for "various evasive manoeuvres". They can go into temporary bankruptcy to break union contracts or avoid liabilities, then come back "without ever shutting down" or "ever suspending a cheque to the chief executive officer". They can transfer costs such as fines they incur onto their workers or consumers and pour money into lobbying politicians to act in their interests, then claim the costs as a tax deduction. They are even taxed at lower maximum rates than individuals (which is true in Australia as well as the US) and yet are frequently "bailed out by the taxpayer" when they misbehave.

CUBs: the way forward

Nader said it's up to consumers to demand something back from corporations in exchange for all these privileges, and argued a minimal consideration is their co-operation with a new kind of consumer group, like the Citizens' Utilities Boards (CUB) in the US, where utilities are private corporations. Americans in recent years have embraced these groups in large numbers, he said. They begin with an invitation — arriving in the same envelope as your power, gas or phone bill — to join a state-based, specialist consumer group with full-time staff who have expertise in the industry from which the bill came.

These groups are self-funding: consumers pay a small joining fee of around $US10. There is no cost to taxpayers and none to the industry aside from the negligible trouble of inserting the brochure with its bill. Nader said one such group had saved electricity consumers in the state of Illinois $US4 billion since 1983, including a single payout of $US1.3 billion (or $US330 per family) in 1993 — which may help explain its membership of 200,000. This was achieved because the group had caught the Commonwealth Edison company passing on to consumers costs arising from its own mismanagement that had led to excess generating capacity; costs that should rightfully have been borne by its shareholders. The CUB negotiated the refund directly with the company based on its own research and without recourse to a court action, although Nader said "it would have filed one".

He said Australia was ripe for such a development: "You are at a perfect time in your history to lay the groundwork, prior to the next historic mistake called 'privatisation'." He described it as "ideologically invulnerable" because the groups are cost-free to government and industry and membership entirely voluntary. He called it a "perfect, perfect opportunity" for the Consumers' Association, other consumer groups, trade unions, the Public Interest Advocacy Centre, etc, to establish a new "infrastructure of consumer advocacy" that will translate easily into the banking and insurance sectors that comprise such a large and influential part of the economy.

As always, Nader left his audience with plenty of food for thought.

The managed mortgage

Banks, building societies and credit unions are no longer the only institutions offering home loans. You can now get housing finance through a number of 'mortgage managers' — but exactly what are the benefits and risks involved with borrowing from one of these new players?

A NEW FORCE HAS EMERGED IN THE Australian home loan market during the past two years. Several companies have set themselves up as mortgage managers or originators in direct competition with the major banks and other traditional lenders — they're listed in the table *Mortgage managers vs the Big Four*.

Originators and managers raise money directly from banks, insurers, superannuation funds or through 'securitisation' programs (explained in *Securitise what?* on page 15) and use that money to lend to consumers for housing finance. Originators stick to the business of acting as the middleman between 'wholesale' lenders and 'retail' borrowers. Mortgage managers act as the middle agent and then continue to manage the pool of loans they create on behalf of the wholesale lenders.

Mortgage managers offer home loans at low interest — but are there any snags you should know about?

Many consumers are being attracted to mortgage managers because they provide disgruntled bank customers with an alternative source of housing finance and, more importantly, they have been offering home loans at lower interest rates than the banks.

Even though some mortgage managers borrow their funds directly from banks, they have been lending to home buyers on terms more generous than those available to bank customers. These discount rates have been available because mortgage managers have fewer overhead expenses than the banks, so they have made a profit without having to lend money at a much higher interest rate than the rate they actually pay out on the funds they borrow.

Aussie Home Loans is the mortgage manager that has had the greatest impact in the housing finance marketplace so far. The following outline of how Aussie Home Loans does business should give you a reasonable understanding of the benefits and risks involved with taking out a mortgage through a mortgage manager.

Of course, you should always shop around for the best deal. Home loan interest rates have been rising over the past nine months so it's important to look at the deals being offered by banks, building societies, credit unions and mortgage managers before deciding who to do business with.

Our table, *Mortgage managers vs the Big Four*, was supplied by **Cannex**. If you have a fax machine, Cannex can supply you with a list of current mortgage interest rates for all the major banks, building societies, credit unions and other lenders. Their poll fax number is 019 725 661. The rates shown in our table were current on January 9, 1995; they're for information purposes only and should be confirmed by the lender quoted.

Case study: Aussie Home Loans

Nick Paten, general manager of Aussie Home Loans: "We're set up to look after the needs of the client."

Who are they?

Aussie was able to gain the media spotlight last year when it decided to lower its interest rates at the same time as the major banks started to put rates up. General manager Nick Paten claims Aussie Home Loans was also the first lender to offer consumers seven-day service and a "we come to you" service. "The vast majority of our interviews take place in the person's home in the evenings," says Paten. Other lenders are now making similar claims about being the 'first' to offer such services.

Aussie Home Loans now has over $1 billion of loans under management. The company is currently approving $170 million worth of new mortgages each month and they've just expanded their operations to take in Brisbane and Melbourne in addition to Sydney and Canberra. The company is registered nationally and intends to expand its operations further.

Nick Paten says there are two main reasons why consumers have been flocking to mortgage managers in preference to taking out a mortgage with a more traditional lender. Lower interest rates are the main attraction. "We have proven over the past three years that we can consistently deliver at a lower rate," he says. "Service is the other advantage. We're set up to look after the needs of the client."

Are they safe?

Aussie Home Loans has many customers who are first home buyers but "we don't go for the really hard first home buyer market. [Our borrowers] need a 10% deposit in serious savings and all loans are mortgage insured". Other customers are people buying their second home, and they deal with investors. "If an investor has good equity in their home, we'll fund over 100% of the price of the investment property to cover fees and expenses. We'll take a first mortgage over the investment property and a second mortgage over their home," he says.

Organising a second mortgage over your home to purchase an investment property is a high-risk strategy — not one that CHOICE would recommend for the average punter. Paten admits he hears of clients being told to be wary of dealing with Aussie Home Loans at all. However, he says taking a first mortgage with Aussie is an "entirely safe transaction". (See *Our verdict* on page 16.)

How does he answer the allegation that a mortgage manager has the right to on-sell your mortgage to an insurance

MORTGAGE MANAGERS vs THE BIG FOUR

	Standard variable % pa	Special variable % pa	1 year fixed/cap % pa	3 years fixed % pa	5 years fixed % pa
BANKS					
ANZ Bank	10.5	—	10.75	11.6	11.95
Commonwealth Bank	10.5	8.5	—	10.8	10.95
National Australia Bank	10.55	—	8.25	11.6	11.95
Westpac	10.75	8.95	9.25	11.6	11.95
OTHER LENDERS					
AIDC	9.55	—	—	12.1	12.0
Aussie Home Loans	8.95	—	9.95	11.5	11.75
Austral Mortgage Corporation	8.95	—	—	11.7	12.0
BMC Mortgage	9.5	—	11.75	12.0	12.0
FAI First Mortgage Limited	9.75	—	—	12.25	12.25
Finance, Lease and Mortgage	9.75	—	—	—	—
First Pacific Mortgage Corporation	9.5	—	—	12.0	12.0
Heine Mortgage Management	8.5	—	—	—	—
Macquarie Residential Mortgage	10.3	—	12.15	—	—
National Mortgage Market	9.4	—	10.7	12.5	—
Perpetual Trustees	—	—	—	12.5	—
Queensland State Home Loans	—	7.9	9.95	11.5	11.95
RAMS Mortgage Finance	8.75	—	—	—	—
Sandhurst Trustees	10.75	—	10.75	12.75	—
WA Home Loans	7.85	—	9.5	11.15	11.75

SECURITISE WHAT?

What is this trendy new piece of finance-speak — securitisation? In simple terms, securitisation is the process of turning a loan, usually a mortgage, into an asset or security — something that can be traded in the financial marketplace.

So the securitisation of mortgages refers to the potential for banks and other lenders to sell off packages of mortgages to funds with managers and trustees. An example is the arrangement the PUMA fund has with Aussie Home loans (see page 16).

company or foreign bank? "Any mortgage can be traded, whether it's with a bank or a manager," he says. "Banks can choose to securitise any portion of their books at any time."

Aussie has also been known to negotiate a mortgage on the basis that the borrower has a guarantor. The company has offered to take a second mortgage over the guarantor's home as security for their son's first mortgage. Guaranteeing a loan for someone else is risky business — you are actually entering into the same financial obligations as the person taking out the loan. It's even more risky when you're using your own property as security for the loan. Aussie would only need a guarantor if it had doubts about the borrower's ability to repay their mortgage. If *any* lender suggests you need a guarantor to qualify for a home loan, it's a sure sign that they really don't think you can afford the loan. Perhaps you should defer borrowing for a home until your finances are in better shape.

What about the rumours that were circulating in the housing finance market recently that Aussie Home Loans was in the middle of a funding crisis and was delaying giving borrowers official approval for their mortgages because they were running short of money to lend? Paten says the company was experiencing problems getting loans approved during the last months of 1994 but says the problem was purely administrative.

A huge increase in the volume of loan applications received by Aussie Home Loans during the latter months of 1994 did lead to processing delays, so the company employed a night shift and moved representatives of its funders and insurers into its own offices to speed up approvals. He says they're now back to a six-day turnaround time. He is adamant that the problem had nothing to do with funding.

How do they operate?

The bulk of funds are currently provided by the Primary Industry Bank of Australia (PIBA) and through Macquarie Bank's subsidiary, PUMA Management Limited.

PIBA supplies money to a fund which Aussie Home Loans lends to home buyers, manages and takes a margin as a fee. Because the bank doesn't have the cost of administering the loans, it is able to supply money to Aussie Home Loans at a very low interest rate. As a result, Aussie can pass it on to consumers at a lower interest rate than many other lenders.

If a loan is sourced from the PUMA Fund, Aussie Home Loans' role is akin to that of property or fund managers. The loans become the 'portfolio' of the PUMA Fund in much the same way as a property trust has a portfolio made up of office blocks and shopping centres or a share trust has a portfolio of sharemarket investments.

Regardless of whether the money comes from PIBA or PUMA, the costs for the home buyer are similar to those for bank, building society or credit union loans. There are no ongoing fees, but you will have to pay an initial $500 that covers the cost of the property valuation, solicitors' costs for preparation of the mortgage and, if you're borrowing less than 76% of the property's value, that initial fee also covers the cost of your mortgage insurance. If you're borrowing more than that amount, you will have to pay for your own mortgage insurance in addition to the $500 fee. If you're taking out an investment loan, the fee is $975. These application fees are a source of income for Aussie; they're not passed on to PUMA or PIBA.

OUR VERDICT: SHOULD YOU BORROW FROM A MORTGAGE MANAGER?

At first glance, mortgage managers appear to be offering competitive home loans that may well be worth a look. However, they are a relatively new phenomenon in Australia, so the risks involved in borrowing money from them are unknown. There are some definite disadvantages involved in dealing with them:

- They are not regulated by the Reserve Bank of Australia (RBA). In fact, no government institution has direct responsibility for regulating mortgage originators or managers. They don't have to meet the same requirements as the banks in terms of keeping specified amounts of capital to back their lending activities. However, as the RBA loosens up its rules, it is expected that many banks will sell off some of their mortgages and move them 'off balance sheet' — which means they won't have to meet the RBA's capital requirements either.
- Securitisation is also a relatively new process. It is not clear what would happen if a mortgage originator/manager went broke.
- Borrowing through a mortgage originator/manager means you can't seek redress through the Banking Industry Ombudsman scheme if anything goes wrong.
- It's also unclear how mortgage managers will perform in a high interest rate environment when their already thin margins are squeezed. If you take out a variable interest rate mortgage with a manager, there's no guarantee that it will continue to offer rates that are lower than the banks. If you choose to lock into a fixed interest rate for the first year or two, you may find yourself jumping to a much higher rate at the end of that fixed period. (This is the case with all lenders so, whoever you do business with, check that you could still afford your repayments if rates were higher than at the time you took out the loan).
- We strongly advise against borrowing through a mortgage originator or manager if they seek a guarantor as a condition of the loan. For that matter, we advise against borrowing for a house with a guarantor no matter who you're borrowing from.

Breadwinners

Our tests confirm that all types of bread are good for us. So enjoy them all!

ALL VARIETIES OF BREAD ARE nutritious. They're relatively low in fat and kilojoules and are a good source of fibre, energy and complex carbohydrate. Our test results show that, unless bread contributes a very large part of your daily food intake, you won't get major differences in nutrition, regardless of the type of bread you eat or whether you buy your daily loaf in a supermarket or hot bread shop.

What's available?

Bread is said to be the most common, convenient, cheapest and oldest form of processed food, with a history dating back more than 10,000 years. Although we eat much less of it than we used to, it is still an important part of our daily lives. In Australia, on average we eat around 45 kilograms of bread a year (about four slices a day). In the late 1950s, however, consumption was around 69 kg per person (six slices a day).

Gone are the days when bread was synonymous with the boring, bland, white sandwich loaf. Today a vast array of tempting, tasty breads is widely available, ranging from bagels and focaccia to pita and pumpernickel. Nevertheless, while adults are becoming more adventurous with their choices of bread, most kids demand the standard white variety, which still has the major slice of the market. It accounts for about 55% of all bread eaten, followed by multigrain and wholemeal.

What's the difference?

We analysed the nutrients per serve in seven popular types of bread — see pages 20 and 21 for the details. According to our test results, the differences in nutrition per serve weren't large. In summary, the light rye, wholemeal and multigrain varieties contained more fibre than other types, while the focaccia, pita and light rye were relatively high in salt. We also found the focaccia and fruit loaf contained more fat than the others.

Is bread fattening?

Bread sales declined dramatically about 30 years ago, partly because a wider variety of snack foods became available

and partly because many people began to think bread was fattening. As our tests confirm, bread is relatively low in fat and kilojoules (or calories), particularly in comparison with many popular snack foods.

While an average 30 gram slice of bread contains around 280 kJ and a teaspoon of butter or margarine adds another 150 kJ, a small 50 gram packet of potato chips has around two and a half times as many as this. A healthy diet containing bread can actually help you control your weight: it's relatively low in fat and its fibre content makes it so filling it's difficult to eat too much of it.

It's not the bread but what you put on top that can be fattening. Spread butter or margarine thinly (or don't use it at all) and avoid fatty sandwich fillings. Many cheeses, meats (particularly processed types) and mayonnaise, for example, are high in fat. Choose lower-fat alternatives such as reduced-fat cheeses or ricotta and cottage cheese, meats where you can trim off the fat, low-fat dressings and include plenty of vegetable or salad-based fillings.

How much should you eat?

Nutritionists are advising all of us (including those who are watching their weight) to eat more bread. It's a cheap and nutritious food and provides complex carbohydrate, dietary fibre, protein, vitamins (especially the B-group vitamins) and minerals. According to the CSIRO, we should all eat at least five helpings of bread and cereals a day; active people should have up to 12 serves. (A serve may be one slice of bread, a bowl of breakfast cereal, a cup of cooked pasta or a half-cup of cooked rice.)

In this way you can improve the amount of complex carbohydrate and fibre in your diet, which may help reduce your risk of heart disease, diabetes and bowel cancer.

Is white bread good for you?

White bread contains less fibre, B-group vitamins (except thiamine, which is now added to all bread flour) and minerals than wholemeal, but it's still a significant source of those nutrients as well as carbohydrates. You needn't feel guilty if you fail to convert the kids from white bread to multigrain or wholemeal or if you prefer white yourself.

To make up for most white bread having less fibre than wholemeal, eat plenty of other fibre-rich foods (such as fruit, vegetables and other cereal products).

How can you keep bread fresh?

You can keep bread fresh for several days at room temperature in a well-ventilated crock or bin. It will also stay moist for a few days if kept in a plastic bag, though crusty loaves will go soft quickly. After a few days, condensation can build up on the inside of the bag, encouraging mould growth.

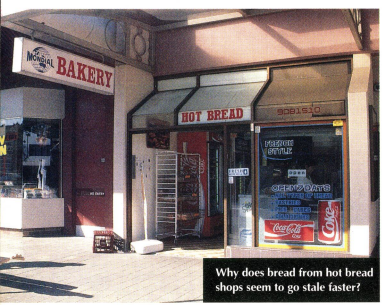
Don't keep bread in the fridge as the low temperature will speed up the staling process. To keep bread fresh for a longer time, seal it in a plastic bag and put it in the freezer. This stops mould growth and slows down the rate of staling. To freshen stale bread, sprinkle it with water, wrap in foil and pop it in a warm oven for about 10 minutes.

OUR ADVICE

- All bread is good for you, but wholemeal types have the most dietary fibre and therefore make the best choices, though fibre-increased white bread has about as much fibre as wholemeal.
- Eat at least five serves of bread and cereals a day.
- Cut back on fats instead of cutting down on bread if you're watching your weight.
- Go easy on butter and margarine and choose low-fat sandwich fillings.
- If you eat a lot of bread and are watching your salt intake, choose salt-reduced, low-salt or salt-free varieties.

SOME LIKE IT HOT

Numerous hot bread shops have sprung up in recent years and they now account for about 30% of bread sales. In this category we've included in-store bakeries in supermarkets, which have about 8% of the market. Hot bread shops often don't make bread from scratch on the premises; it may be produced from pre-mixes (often bought from large commercial bakeries) which need only water and yeast added, or the bread may be delivered frozen and almost fully cooked.



Why does bread from hot bread shops seem to go stale faster?

You may have noticed that although loaves bought from hot bread shops seem very fresh at first, they tend to go dry and stale more quickly than packaged breads. There may be several reasons for this. For a start, hot bread shops tend to use less water in the dough, as it's easier to cut and shape by hand if it's stiffer. In addition, the time the bread is baked is not as precise as in large bakeries. It is often baked a little longer to give it a distinct crusty texture and somewhat richer flavour. And hot bread shops, unlike large commercial bakeries, usually leave bread on racks until all baking is over before slicing and packaging it.

How does bread from hot bread shops compare nutritionally with packaged, commercial brands? To find out, we did a full analysis of samples of white bread bought from 21 shops around the country and compared their wholemeal breads just for fibre content.

We found white bread from hot bread shops contained slightly more sugar, fat, carbohydrate, protein and salt than packaged brands, while the fibre content of the wholemeal bread from hot bread shops varied widely — 2 to 5 g per serve.

What's in your daily bread?

BREADMAKING HAS CHANGED A LOT over the years. Australia's first bush settlers made bread (damper) from a dough of flour, water and a pinch of salt baked in the ashes of a campfire. These days large modern bakeries use time-saving methods, such as intensive mechanical mixing, and often add flour 'improvers' to produce light, airy loaves that stay fresh for days.

Modern bread also has a higher nutritional value. Flour now contains more of the outer layers of the wheat grain — see Figure 1 — where most vitamins and minerals are concentrated, thanks to improved wheat varieties and milling techniques. In addition, all flour for breadmaking in Australia now has added thiamine (vitamin B_1).

Most ingredients in bread are defined in food regulations. Some of the main ingredients are:

■ **Baker's flour** (also known as 'strong' flour): its higher protein content retains carbon dioxide produced during fermentation and helps the dough to rise, resulting in an airy loaf.

■ **Wholemeal flour**: flour containing 100% of the wheat grain.

■ **Kibbled rye or wheat**: cracked, softened whole grains of rye or wheat.

■ **Yeast**: produces carbon dioxide that causes the dough to rise.

■ **Gluten**: the main protein in wheat; it allows the dough to stretch and rise and produces the characteristic open texture of bread. Extra gluten gives a lighter loaf. If you have an allergy to gluten, you can buy gluten-free breads.

■ **Bran**: the seed coat of grain and the main source of fibre in any bread.

■ **Malt flour**: ground, germinated wheat that provides enzymes needed in the dough and also adds flavour.

■ **Sugar**: may be added as a food for the yeast. Only small amounts remain in the finished loaf, except for some specialty breads, such as fruit loaf.

■ **Salt**: gives flavour and controls yeast fermentation.

■ **Fat (usually vegetable)**: small amounts may be added to improve texture and make the bread easier to cut.

Artificial colours and flavours are not permitted in bread, but small quantities of certain additives are allowed to improve the bread's texture, volume and keeping qualities. Food regulations stipulate which additives may be used and in what quantities. Some of these additives are:

■ **Flour treatment agents** (such as ascorbic acid, L-cysteine and sodium metabisulphite) help the dough rise and make it softer and lighter.

■ **Emulsifiers** (such as sodium stearoyl lactylate) make the bread softer and stop it going stale so quickly.

■ **Preservatives** (like sodium or calcium propionate) inhibit the growth of mould and keep bread 'fresh' for longer.

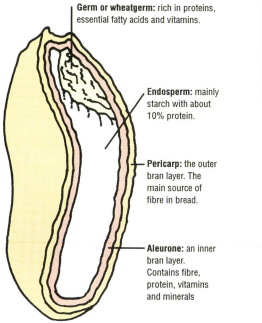
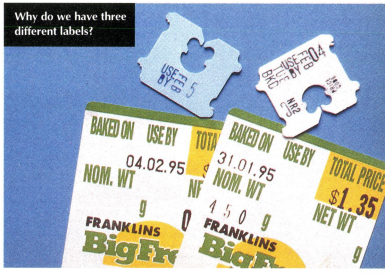

Germ or wheatgerm: rich in proteins, essential fatty acids and vitamins.
Endosperm: mainly starch with about 10% protein.
Pericarp: the outer bran layer. The main source of fibre in bread.
Aleurone: an inner bran layer. Contains fibre, protein, vitamins and minerals

Figure 1. Modern milling separates the different parts of the grain and produces flours of different 'extractions' according to the amount of the grain used. White flour has a 78% extraction rate, meaning it contains 78% of the wheat grain. It's made from the inner layers of the grain, called the endosperm. Wholemeal flour (100% extraction) is made from the whole grain, including the outer bran and germ layers, which are rich in fibre, protein, vitamins and minerals.

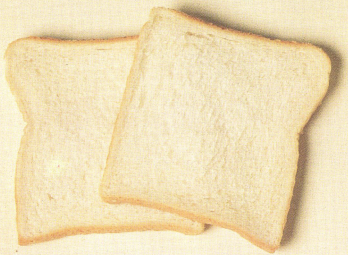
WHAT'S ON A LABEL?

Food regulations require that the label on packaged bread must include the variety of bread, its brand name, manufacturer and weight. Ingredients must also be listed in rank order from the largest by weight down to the smallest, except for water. These requirements also apply to wrapped bread bought in hot bread shops, unless the bread is wrapped as you buy it. In our experience hot bread shops frequently fail to put labels on their prewrapped bread. Some bread labels also contain a nutrition panel, but this is not mandatory.

Regulation changes introduced in June 1994 by the National Food Authority require that manufacturers choose one of three options for date stamping on bread labels: a 'use by' date, a 'baked for' date (which means the bread has been baked no more than 12 hours before the date), or 'baked on', which is the actual day the bread was baked. We believe allowing manufacturers to choose from three options is confusing. Consumers simply want to know when bread is at its freshest. The only term we think should be used is 'baked on'.

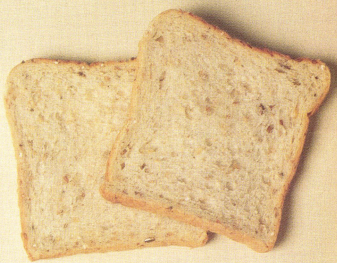


Breadlines



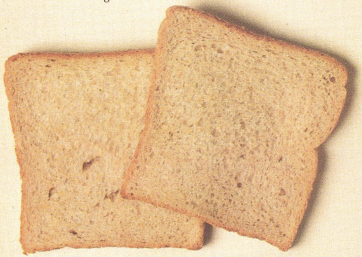
White bread

White bread is baked from white flour made from the starchy inner part of the wheat grain. Almost all bran and wheat germ have been removed, which decreases the content of fibre, vitamins and minerals. You can also get fibre-enriched white bread, which contains nearly as much fibre as wholemeal.
Nutrition information for a serve of two slices (56 g):
Fibre 2 g
Energy 590 kJ
Fat 1 g
Sodium 275 mg



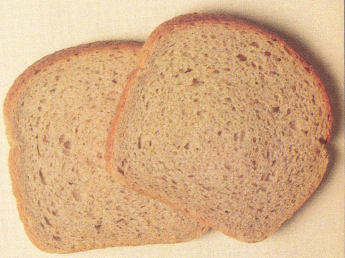
Multigrain

Multigrain is made from white and/or wholemeal flour mixed with whole or kibbled (cracked, softened) grains of wheat, rye, or other cereals to give a crunchy, grainy texture and boost its fibre content. The nutrient content of mixed-grain breads depends on how much white or wholemeal flour is used.
Nutrition information for a serve of two slices (56 g):
Fibre 3 g
Energy 600 kJ
Fat 2 g
Sodium 275 mg



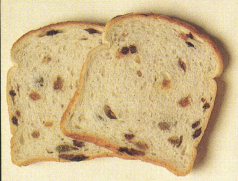
Wholemeal

According to food regulations wholemeal bread must contain 90–100% wholemeal flour (which is made from the whole of the wheat grain, including the bran and wheatgerm). It can be blended with up to 10% white flour.
Nutrition information for a serve of two slices (56 g):
Fibre 3 g
Energy 570 kJ
Fat 1 g
Sodium 255 mg



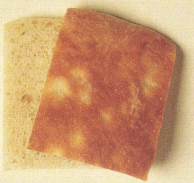
Light rye

Light rye contains at least 30% rye flour mixed with wholemeal and/or white wheat flour. It may also contain rye meal and/or kibbled or cracked grains. It's not as dark and dense as traditional rye bread, which contains much more rye flour. Although light rye is promoted as rye bread, it contains far more wheat than rye.
Nutrition information for a serve of two slices (76 g):
Fibre 4 g
Energy 760 kJ
Fat 2 g
Sodium 380 mg



Fruit loaf

Made from white wheat flour, fruit loaf contains 15–20% dried fruit and/or peel, with 4–5% sugar added. It's sweeter, richer and moister than white bread.
Nutrition information for a serve of two slices (68 g):
Fibre 2 g
Energy 810 kJ
Fat 3 g
Sodium 150 mg



Focaccia

Relatively new in Australian bakeries, focaccia has been popular in Italy since Roman times. Made from white flour, it's like a thick pizza base. After baking, it's brushed with oil and dusted with rock salt. It's often served warmed or toasted. We tested plain focaccia, but some contain herbs, garlic, olives or sundried tomatoes.
Nutrition information for a quarter-loaf serve (65 g):
Fibre 2 g
Energy 720 kJ
Fat 3 g
Sodium 380 mg

Pita

Pita is a round, flat, Middle Eastern bread, which can be split open to form a pocket for fillings. It's also good for scooping up dips and as a quick base for pizzas. The pita breads we tested were made from white flour but wholemeal may also be used.
Nutrition information for a small white pocket (74 g):
Fibre 2 g
Energy 840 kJ
Fat 1 g
Sodium 350 mg

What we did

We created four 'generic' loaves of supermarket pre-sliced bread by combining several loaves of the same type of bread from various brands. Each composite loaf included the top-selling brands for basic white, multigrain, wholemeal and light rye. We also examined a number of top-selling brands of fruit loaf, focaccia and pita individually.

We analysed samples of white bread bought from 21 hot bread shops (seven each in Adelaide, Sydney and Brisbane) and compared just the fibre content of hot bread shop wholemeal breads.

You'll find our test results in *Some like it hot* on page 18 and *Breadlines*.

Dietary fibre

Breads and cereals are good sources of dietary fibre. Nutritionists generally recommend we eat about 30–40 grams of dietary fibre every day. A diet high in fibre may help prevent constipation, colon cancer and aid the control of obesity and diabetes.

Energy

Energy refers to the number of kilojoules (or calories) released when a food is burned for fuel within the body. Although many people mistakenly believe high-carbohydrate foods like bread and potatoes are fattening, in fact they provide relatively few kilojoules, mainly because they are low in fat.

In our bread samples, 70–80% of the energy came from carbohydrate (mostly complex carbohydrate, also called starches), 10–15% from protein and 6–14% from fat. The complex carbohydrate in bread (and other starchy foods, such as potatoes, rice and pasta) is the best source of energy, rather than the fat and sugar which supply most of the kilojoules in many processed foods.

Fat

Small amounts of fat are added during breadmaking to soften the texture of the bread and improve its keeping quality.

Bread is naturally low in fat, but pastry products like croissants always contain a lot (one croissant has more than 15 grams of fat and as many kilojoules as four slices of bread). Most cake-type muffins, including those containing bran (but not English muffins), also have a lot of added fat. Remember to avoid adding fatty spreads to your bread.

Salt

If you eat a lot of bread every day, you could easily consume more salt (or sodium) than is recommended for a healthy diet. Two slices of bread contribute about 15% of the upper recommended dietary intake for sodium. Apart from fruit bread, the breads we tested had fairly high sodium levels, particularly light rye, pita and focaccia (which is dusted with rock salt). If you're watching your salt intake (perhaps because you have high blood pressure), try reduced-salt breads (one third less salt) or low-salt (three quarters less) varieties; salt-free spreads can also help you cut down. Don't give up immediately if you find the taste of salt-free bread relatively bland — it may take some weeks to get used to it.

How to choose a safer new car

Recent studies have shown some cars offer better safety features than others. So what should you look for if you want a safer car?

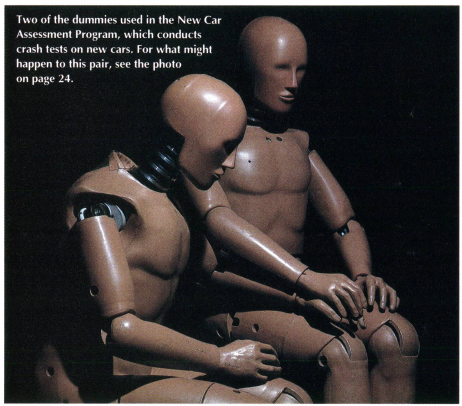
THERE ARE BIG DIFFERENCES IN safety between different car models. For example, the driver of a Subaru Sherpa is six times more likely to be seriously injured than the driver of a BMW 5-series in a similar crash, according to the Driver Protection Rating program.

Car safety systems are designed either to help you avoid an accident or to minimise injuries if one happens. Primary safety features help drivers avoid an accident in the first place, and include such items as brakes, steering, anti-lock braking and daytime running lights.

Secondary safety, or crashworthiness, deals with factors that affect performance during a crash, such as the controlled crushing of the vehicle's front panels, crushable bumper bars, a strong passenger compartment, improved seatbelts, airbags and head restraints.

The likelihood of a car being involved in an accident is difficult to determine because it is heavily influenced by factors including the driver's behaviour, age, sex, attitude, the time of day and whether the driver has taken drugs or alcohol. However, how a car performs in a severe crash can be more accurately assessed and predicted.

There are two car safety rating systems in Australia, the Driver Protection Rating and the New Car Assessment Program (NCAP).



Two of the dummies used in the New Car Assessment Program, which conducts crash tests on new cars. For what might happen to this pair, see the photo on page 24.

■ The Driver Protection Rating, a joint project by the NRMA, RACV, Roads and Traffic Authority NSW (RTA) and VicRoads, combines information from police reports on crashes in NSW and Victoria. It provides ratings which show the likelihood of a driver receiving an injury in a certain vehicle, for every hundred crashes that vehicle is in.

Copies of the Driver Protection Ratings are available from NRMA and RACV offices, as well as RTA and VicRoads motor registries.

■ The New Car Assessment Program, a joint initiative of transport authorities and motoring organisations around Australia, looks at the probability of drivers and passengers being seriously injured in frontal and front offset crashes. This is determined by conducting crash tests on new cars. The results indicate a large variation in the effectiveness of secondary safety features. The difference in probability of receiving a serious injury between the worst and best car tested ranged from 96% to 14% (*Drivelines*, August 1994, discusses NCAP in more detail.)

Both programs stress that their ratings are not an indication of the overall safety of any car — they don't take into account primary safety features — and should only be considered a guide to safety performance. And if you're interested in the reliability of a car as well as its safety, see *Can you rely on your car* on page 6.

Other factors, which are often marketed as extras or accessories, also play an important role in making cars safer. Some of them are discussed in the next two pages.

Road fatalities have steadily fallen since the 1970s up to 1993, and we'd certainly like to see this trend continue. By making informed decisions when buying a car, you can make sure you get the safest package for your money. But don't forget safety systems can only do so much; they can't compensate for bad driving.

CARGO RESTRAINT

Unrestrained cargo can be very dangerous during an accident in open-cabin cars such as hatchbacks, station wagons or vans. This was highlighted in an accident early last year in which two children were injured, one fatally, when the back of their folding seat was hit by a 30 kg computer and printer.

The Ford hatchback they were travelling in was involved in an accident with an impact speed of 48 km/h. The computer and printer in the back took on the equivalent force of a 600 kg weight.

Australian Design Rules (ADR3) specify that folding seats, like those used in most hatchbacks, need to be able to withstand a force equal to 20 times their own weight. According to Michael Case of the RACV, these rules are inadequate as they "do not mandate the necessary strength of folding seat backs required in some frontal crashes".

Hatchbacks and wagons should be loaded so that the chances of being struck by unrestrained cargo during an accident are reduced. Some suggestions include:

- Placing cargo items as close as possible to the back of the seat.
- Never stacking items higher than the seat back.
- Placing heavier items as low as possible.
- Paying attention to the secure storage of smaller items such as briefcases, steering locks and cameras. Under crash forces such loose items could become lethal projectiles inside the cabin.
- When vehicles are frequently used for carrying goods, drivers should consider installing a permanent steel mesh barrier to separate the cargo bay from the cabin area.

Car safety ratings and features were the theme of a recent NSW Roads and Traffic Authority seminar, at which the safety factors mentioned in this article were discussed. The aim was to make fleet and individual car buyers aware of what to look for to get a safer car.

INTERIOR SAFETY ITEMS

Interior items, such as seats, mirrors, steering columns and seatbelt type, play a part in accident prevention and injury reduction. What should you look for?

Dr Michael Henderson from the Association for the Advancement of Automotive Medicine says good ergonomic seat design improves comfort and reduces fatigue. Being able to adjust the seat's height and position allows drivers of all sizes to have a good view of the instrument cluster and the road. It should also allow all controls to be easily reached.

Head restraints reduce the risk of neck injury in rear-end impacts. Steel seat frames and pans can reduce injury to internal organs by resisting the tendency of the human body to 'submarine' under the seatbelt (slip under the lap portion) in a crash.

Rear-view mirrors need to be well positioned and adjustable from the driver's seat, ensuring a good view.

An adjustable steering wheel position makes it easier for the driver to have a good view of the instruments, and reduces discomfort and fatigue. Collapsible steering columns, compulsory under Australian Design Rules, help reduce injury in accidents.

Seatbelts may seem to be all the same, but according to Dr Henderson, some seatbelt assemblies give greater protection, some are more comfortable than others and some are easier to use. Desirable features include:

- Height adjusters at the top end of the sash belt.
- Belt pre-tensioners, which tighten the belt firmly around the occupant at the instant of a crash.
- Webbing clamps, which prevent any slack on the retractor wheel from being released in an accident.
- Seatbelts mounted on the vehicle's seat, rather than on the door pillar and floor.
- Three-point lap/sash seatbelts for all seating positions, including centre seats.

DAYTIME RUNNING LIGHTS

Motorcycles built on or after March 1, 1992, are required to have their headlights hard-wired on. This means the lights are automatically turned on when the ignition is switched on. Carleen Reilly-Jones, a research engineer with the Road Safety Bureau at the NSW Roads and Traffic Authority, believes daytime running lights (DRL) should be extended to cars.

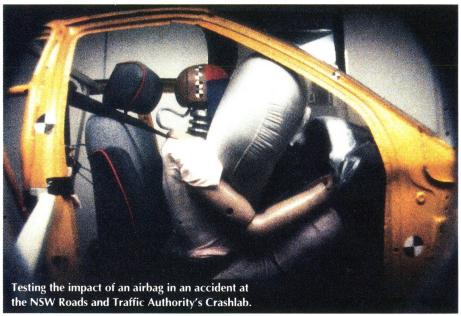
At the time of its introduction for motorbikes there were a number of arguments against DRL, including that it would be harder to see vehicles that weren't using headlights, it would be difficult to see DRL vehicles driving out of the sun, and that once people got used to DRL, it wouldn't make much difference.

According to Reilly-Jones, perceptual error — or not seeing things — contributes to between 40% and 80% of all accidents. If DRL makes cars easier to see, then this should lead to a decrease in accidents.

She says research shows DRL makes vehicles visible from greater distances. If drivers can see another vehicle from further away, they have more time to react and avoid it. DRL also acts as an attention-getter in the peripheral vision field.

Overseas countries using DRL for cars have recorded reduced accident rates. The closer the country is to the North or South Pole, the better the reduction in accidents. For example, Finland, located at around 65°N latitude, experienced a 46% reduction in multiple-vehicle accidents. At around 39°N latitude the USA reported reductions in multiple-vehicle accidents of 12%.

Based on overseas experience NSW, at between 29°S and 34°S latitude, should expect an accident reduction rate of around 6%, Victoria (34°–39°S) a reduction of about 10%, and Tasmania (39°–44°S) about 14%.



Testing the impact of an airbag in an accident at the NSW Roads and Traffic Authority's Crashlab.

ANTI-LOCK BRAKES

Anti-lock braking systems (ABS) are a popular safety option currently offered by car manufacturers. By preventing the wheels from locking up, ABS allows drivers to maintain better control of their vehicle during hard braking, even if turning the vehicle at the same time. It also allows maximum braking efficiency on slippery surfaces.

According to the NRMA's manager for vehicles and the environment, Jack Haley, some research shows that once drivers become familiar with the better braking performance, they tend to drive faster, accelerate faster and apply greater force to the brake pedal. ABS is designed to give better control in an emergency, not to allow people to drive more aggressively.

Some drivers have their first experience with ABS in an emergency and wrongly think the pulsating brakes and shuddering of the car are a malfunction. As a result they release the brake, which is the wrong thing to do in ABS-equipped vehicles.

Haley recommends that drivers with ABS fitted to their vehicle should be trained in its operation under safe conditions, so if an emergency occurs they can take advantage of the ABS brakes and concentrate on accident avoidance.

AIRBAGS

Airbags protect the occupant for one frontal or angled crash, and are becoming more common in Australian cars. However, they are no substitute for seatbelts, as they don't protect against other types of crash, such as side impact, rollover or rear impact — which together constitute about half of all crashes.

New types of airbag, such as Volvo's Side Impact Protection System (SIPS), do offer protection against side impacts, but are so far not widely available.

Airbags are designed to fire only in serious accidents, and when used in conjunction with a seatbelt can be effective in minimising injuries. For example, the Holden Commodore airbag is calibrated to fire only when the impact is equivalent to hitting a concrete wall at over 25 km/h, which would usually result in the vehicle being a write-off.

The cost of airbags for Australian cars varies widely. As an optional extra in local models they cost around $1000. The 1994 Ford Falcon and most Holden Commodore models have them as standard equipment.

The NRMA believes it won't be long before airbags are standard in all cars and recommends drivers choose to have them in new cars if they're available. It believes properly fitted airbags can reduce injuries in serious accidents.

VEHICLE ACCESSORIES

Some common after-market accessories have the potential to negate safety features found in cars, according to Michael Case from the RACV.

Window tinting reduces the level of light reaching the driver, making it harder to see external objects, especially in poor conditions such as darkness, fog and rain. Tinting on the front side windows is especially dangerous, as vision through these is essential during lane changes, merging into traffic at intersections, seeing pedestrians, motorbikes and cyclists, and using external mirrors.

Aggressively shaped bullbars can make vehicles more dangerous for pedestrians, cyclists and motor cyclists, should they be hit. Modern vehicles are generally equipped with energy-absorbing bumpers and sloping bonnets, which reduce the severity of pedestrian injuries. According to Case, bullbars can reduce the energy absorption from the relatively soft bonnets of cars and change the mechanics of pedestrian impacts.

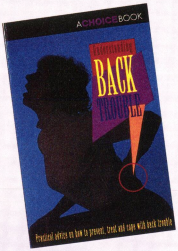
For vehicles involved in severe accidents, the stiffness and mounting points of the bullbar can reduce the benefits of vehicles designed to crumple. As well as being dangerous to pedestrians, the presence of a bullbar may reduce the level of occupant protection designed into the vehicle by the manufacturer. There is also concern that bullbars may cause an airbag to fire at the wrong time, or not at all.

Ford is now offering integrated bullbars for its new Falcon, which it says do not affect safety performance or trigger the airbag, and which according to Case are "relatively friendly to pedestrians". Holden is also working on a design for the Commodore.

Case acknowledges that there is "limited" application for bullbars in country areas, where the risk of animal impacts is high and a bullbar can prevent damage to the car (see *Drivelines*, June 1994, for more on bullbars.)

One after-market accessory that's regarded as a good safety feature is mudflaps, which lessen the chance of rear collision by reducing spray in wet weather, which might obscure the vision of other motorists. ❑

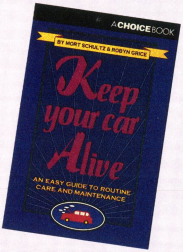
CHOICE BOOKS



Understanding Back Trouble

Understanding Back Trouble offers clear advice on how to cope when you have back problems. It covers many topics including: how your back works and what can go wrong; how to cope with sudden back pain; when to call your doctor; examinations and tests; orthodox and alternative treatments; how to minimise back pain; and exercises.

$18 paperback 168 pp **Code: UBT**

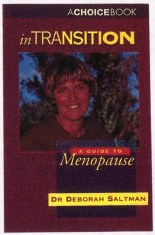


Keep Your Car Alive

An Easy Guide to Routine Care and Maintenance

The key to having a car that ages well is to prevent trouble before it happens. *Keep Your Car Alive* supplies all the information you need about routine maintenance to keep your vehicle in optimum condition. An extensive checklist will help all car owners — first-timers or old hands.

$16 paperback 128 pp **Code: KYCA**



In Transition

A Guide to Menopause

In Transition covers the issues surrounding menopause in a clear, easy to understand, non-patronising way. Topics include: your relationship with your doctor; HRT; osteoporosis; cancer; heart disease; incontinence and prolapse; and conventional and alternative strategies for dealing with problems which may arise.

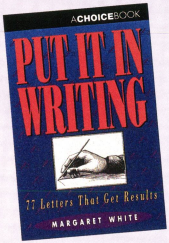
$17 paperback 184 pp **Code: IT**

Facefacts

A Guide to Cosmetics, Skin and Hair Care

Beauty choices for the discerning cosmetics purchaser. *Facefacts* guides you through the thickets of advertising claims and distinguishes the hype from the hard facts, explaining phrases like 'hypoallergenic', 'comedogenic' and 'natural'. It looks at many issues, including testing on animals, how the sun damages your skin, and how best to protect it.

$18 paperback 240 pp **Code: FF**

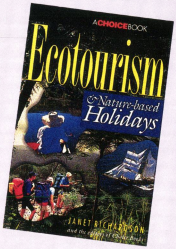


Put It In Writing

77 Letters That Get Results

We all know an effectively worded letter can get results, but quite often we give up before we start, because we don't know how to write it. This book contains 77 well-considered, cool and authoritative letters, written by a lawyer, which can be adapted to suit your situation.

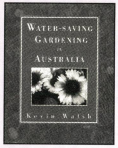
$16 paperback 168 pp **Code: PIIW**



Ecotourism & Nature-Based Holidays

An insight into a new sort of holiday — ecotourism. Enjoy your surroundings while learning about them, and without creating havoc in the Australian environment. This guide gives you information about tour operators, resorts and other attractions.

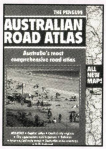
$17 paperback 224 pp **Code: ENBH**



Water-saving Gardening in Australia

This book is perfect for those who want to use water wisely and still have a beautiful garden. It includes information about designing a water-efficient garden, how to minimise water needs in both city and country areas, and a comprehensive list of water-saving plants.

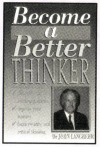
$20 hardcover 198 pp **Code: WSGA**



The Penguin Australian Road Atlas

A comprehensive Australia-wide road guide. It includes 129 maps, including capital city maps, regional maps, and approach and bypass routes to each state capital. Information regarding isolated areas is also included on some maps.

$20 paperback 162 pp **Code: PARA**



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Learning to think more effectively is not just something for final-year students. With the help of useful exercises you can discover your thinking style, improve your memory and critical thinking, and become a more creative thinker.

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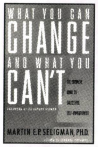
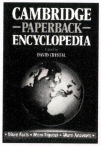


What You Can Change and What You Can't

This book clearly and realistically identifies the areas in your life you can change and helps you decide how to act upon them. Looking at the general and the specific, some of the areas covered include: phobias; post-traumatic stress; weight control; alcoholism; depression; anger.

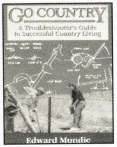
$20 paperback 324 pp **Code: WYCC**



Cambridge Paperback Encyclopaedia

Updated in August 1994, this encyclopaedia delivers comprehensive, up-to-date information in a convenient single volume for both the home and the office. There are over 19,000 entries and an excellent 100-page ready-reference section at the back.

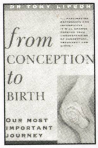
$25 paperback 972 pp **Code: CPE**



Go Country

Owning a block of land in the country is a dream of many people, but there are many practical things you must consider. For example, what makes a 'good' block; electricity; fencing; bushfire precautions; tools; machinery; animals and livestock. *Go Country* explains the practicalities of all these things in simple terms, with illustrations to help.

$25 paperback 240 pp **Code: GC**



From Conception to Birth

The journey from conception to birth is probably the most amazing any of us will ever make. It is also one we don't remember. Dr Lipson's book develops this fascinating topic and includes diagrams, illustrations and pre-birth photographs.

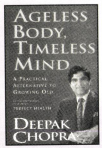
$17 paperback 160 pp **Code: FCTB**

Is it a Lemon?

The complete guide to buying a home, a car, a boat ...

This book won't make you a home, car or boat expert — but it may stop you making a big mistake. It provides basic information about what to look for when buying one of these three 'big-ticket' items, and includes diagrams and checklists.

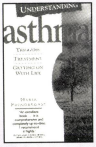
$17 paperback 228 pp **Code: IIAL**



Ageless Body, Timeless Mind

Is aging inevitable? Can we reshape or control the process? Dr Deepak Chopra examines this question by considering the interaction of mind and body processes. This book combines theory, case studies and practical exercises.

$20 paperback 342 pp **Code: ABTM**



Understanding Asthma

Simple and straightforward, this book discusses what asthma is and what triggers attacks, types of medication and other treatments, and how to live with asthma.

$10 paperback 118pp **Code:UA**

Master Works

How to use paint finishes to transform your surroundings

Practical and inspirational ideas and techniques for designing and decorating furniture, walls, floors and fabrics with wonderful painted finishes. Superbly illustrated, and covering many new and old techniques, this book will inspire novice and experienced practitioner alike.

$40 hardcover 182 pp **Code MW**

Baby Games

A wealth of imaginative ideas and songs to use when playing with your child (from birth to three years).

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Dabu the Baby Dugong

The story of a baby dugong in the waters of the Torres Strait. The story shows the close bond between a baby dugong and his mother and the joy and sadness in this relationship. *Dabu* is full of beautiful colour illustrations and is written in both English and Kala Lagaw Ya (the traditional language of the Western Torres Strait). For ages 6 to 10.

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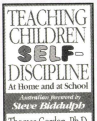

Teaching Children Self-Discipline

This approach aims to encourage children to learn self-discipline, responsibility and co-operation, while developing their self-esteem. It also encourages them to consider the needs of others, including parents.

$16 paperback 258 pp **Code: TCSD**

Keeping food fresh

Should you throw out food that's past its use-by date? Is it safe to scrape off mould and eat the cheese? Does the brown ring around the rim of the mayonnaise bottle mean it's going off? How do you store food so that it keeps its fresh flavour, texture and nutrients and stays safe to eat?

PRESERVING FOOD ISN'T THE problem it was in the days when the only methods available to prolong storage life were salting, smoking, drying and pickling. Indeed modern techniques are so effective, the problem is you might store foods for too long. All foods — even if they're canned or frozen — will deteriorate over time. They will gradually lose their fresh flavour, colour and texture as well as nutritional value.

The length of time you can keep a particular food in your kitchen or pantry depends on a number of factors, including its initial quality, the type of processing and packaging, its moisture content and exposure to heat and air. How it's been stored in the shop and how you treat it at home are also important. With food consuming such a large bite of the family budget, it pays to shop wisely and consider the best way to store it so it stays good to eat.

FURTHER INFORMATION

For more details on food storage, you can phone the CSIRO Information Network in your region:

- **NSW and ACT:** (02) 413 7528.
- **NT:** (089) 22 1720.
- **Queensland:** (07) 377 0390.
- **SA:** (08) 303 9116.
- **Victoria and Tasmania:** (03) 662 7116.
- **WA:** (09) 387 0710.

Manufacturers should also be able to answer your queries about storing their products.

Smart shopping

Although you can economise both in money and time by making bulk food purchases, don't spend money on a product simply because it's cheap. You may buy such a large quantity that you'll end up throwing a lot of it out because you're unable to eat it within the recommended storage time. So shop carefully for good-quality food.

Choose:

- Products with informative labels which list storage temperatures.
- Food from a busy store with a high turnover.
- Products with the longest use-by date.
- Produce kept under optimum conditions in the shop so it will stay fresher for longer at home. (Bean sprouts and eggs, for example, should ideally be refrigerated.)
- Fruit and vegetables which look fresh: they should be bright in colour and firm, have no soft spots, mouldy or discoloured patches, no bruises or breaks in the skin and no sign of wilting. Silverbeet with crisp, glossy, deep-green leaves and firm, bright-orange carrots have more vitamins than those that are limp and faded.
- Meat packed on the day of purchase, which looks fresh, moist and bright in colour.
- Fish with firm flesh, stiff, tight scales, red gills and bright, unsunken eyes and which looks and smells fresh.

Avoid:

- Overbuying, particularly perishable items.
- Swollen containers and cans. This means the food is producing gas (which swells the container), and may be going off. Chilled items such as fruit juices, unprocessed cheeses, pastry and yoghurt may be affected. Spoilage inside cans is rare these days.
- Dairy products and delicatessen items kept outside a refrigerated cabinet.
- Frozen foods which have been stored above the 'load line' in open frozen food display cabinets. This line, which indicates the level at which stored foods will remain frozen, is usually about 5 cm below the rim of the cabinet.
- Frozen food packages containing ice crystals or packets with clumps of ice between them. This indicates refreezing and probably loss of quality. The ice in the pack is water withdrawn from the food, which can result in changes in the flavour and texture of the food.
- Frozen vegetables, apart from spinach, which are not free-flowing in the bag. If they're solid, they've thawed and been refrozen.
- Frozen food in wet or damp packages: another indication of thawing.
- Frozen meat or chicken which is slightly soft to touch. This shows it has already begun to thaw.
- Frozen foods from a store where pallets of frozen and chilled food are left unattended in the aisles.
- Foods in torn packages or with imperfect seals: the food has probably deteriorated in quality.
- Mouldy foods: for example, check cheese and crumpets in transparent packages.

Shop last for chilled and frozen food and keep an insulated cooler in your car for them, or at least ensure they're wrapped in several layers of paper to minimise temperature changes on the way home.

USE BY OR BEST BEFORE?

Check the date stamps on packaged food labels before you buy. It's best to buy food well within its use-by date. Use the use-by date as a rough guide, but bear in mind that perishable items in particular may spoil before that date if not stored properly.

You may well be confused about whether there is a difference between 'use by' and 'best before' dates, because in Australia the two terms are often used interchangeably. In some other countries, however, the use-by date means just that: the product shouldn't be eaten after that date. 'Best before' then indicates the food should be at peak quality until the date given and is still safe to eat after that date, though its quality may suffer.

Under the current requirements in Australia, manufacturers are permitted to choose from three options: 'date of packing' (plus the length of time it will last), 'best before' or a 'use-by' date. Foods which keep for less than seven days are not permitted to use the words 'best before' — but since they can sell the product after this date anyway, there doesn't seem much point in this stipulation.

In Australia food can still be sold after its use-by date. That isn't a problem for less perishable foods, because they deteriorate slowly in quality and it's impossible to pinpoint exactly when they should no longer be used. However, eating highly perishable foods after the use-by date could put your health at risk. On the other hand, because 'use by' can mean 'best before', you may be throwing out food past its use-by date which is still perfectly good to eat. So to avoid confusion and unnecessary wastage, as well as the risk that you might eat foods which have really gone bad, we believe 'use by' should be redefined to clearly mean a genuine expiry date. Only highly perishable foods should have a use-by date, and they should not be sold after that date. Particular foods such as bread or eggs may need special descriptions: 'baked on' or 'laid on', for example. All other foods should carry a 'best before' label.

CHOICE would also like to see a requirement for labels to contain more information on safe food storage and handling.

Keeping food at home

In your fridge

- Keep food covered to protect it from the dry air inside the fridge, to prevent transmission of odours and bacteria and to help reduce nutrient loss.
- Keep the temperature in your fridge below 5°C. Buy a fridge thermometer if you don't have one built into your fridge/freezer, to check that you're keeping food cold enough to slow down bacterial growth.
- Keep the most perishable foods (such as raw meat) in the coldest part of the fridge. In a frost-free fridge the temperature is usually fairly uniform throughout, but in a cyclic defrost fridge (which has a cooling plate at the back of the compartment), the back of the fridge near the cooling plate and the bottom shelf tend to be coldest. In a single-door fridge with a freezer compartment, the coldest part will be the shelf below the freezer.
- Put perishables and leftovers in the fridge as soon as possible.
- Pack hot foods in small meal-sized amounts, stir them if possible to help them cool down quickly (as a large amount of hot food could cause the fridge temperature to rise and give time for bacteria to grow, as well as possibly icing up the fridge) and refrigerate as soon as they stop steaming.
- Don't overfill your fridge (or freezer). It's helpful to be able to see what's in it at a glance so you don't leave foods so long they become old and unusable. It also leaves room for air to circulate, minimising the formation of warm spots.
- Don't store raw meat, poultry or fish above cooked foods, as their juices may drip onto other foods and contaminate them.

In your freezer

- Put frozen food into the freezer as soon as you get home.
- Choose only fresh, quality foods for home freezing.
- Don't freeze food you've already stored for some days as it may have started to deteriorate.
- Wrap, seal, label and date home-frozen food.
- Seal food in freezer bags (making sure you remove any air), wrap it in heavy-duty aluminium foil or store it in containers with tight-fitting lids. Don't use takeaway-food containers which may not be airtight and may crack at low temperatures, or plastic wrap or bags which don't specify they are suitable for freezer use as food stored in them may dry out. If food isn't wrapped properly, freezer burn (patches of discolouration from dehydration) may develop, which can ruin the texture of food.
- Keep the freezer temperature no higher than –18°C. Avoid frequent door opening.
- Don't refreeze thawed raw meat, poultry or fish, as bacteria may have started to multiply during or after thawing, and refreezing will also affect its quality. You can keep thawed meat chilled for about 48 hours before cooking it. Raw meat can be refrozen if thawing is not complete (it's still icy).
- Frozen foods should be safe to eat almost indefinitely, provided they are kept at or below –18°C and were not contaminated when they went into the freezer. However, it's best not to keep frozen food for too long, partly because the temperature of foods in home freezers often rises above –18°C. Also, even at this temperature, chemical reactions leading to loss of quality do still occur, but at a much slower rate.

In your cupboards

- Choose your coolest cupboards to store food. Avoid cupboards under the sink (which may be damp) or those near the stove, dishwasher and other sources of heat. Heat shortens the storage life of all food, including fruit left out to ripen, while light can be damaging to products such as herbs, garlic and potatoes.
- Keep cupboards and shelves clean and dry.
- Rotate stock so older food is moved to the front and gets used first.

Canned foods

- Read the label before putting cans away, as some canned meat and fish must be refrigerated.
- Keep cans in a cool, dry place.
- Turn over your canned stock about once a year so that the least possible loss of quality occurs before the food is eaten. Although canned fruit and juices should retain 75–80% of their vitamin C for at least 12 months, they taste best if consumed within a few months.
- Don't use rusty or dented cans. Even a small dent may put pressure on the seam of the can and allow air in.
- Report any swollen or leaking cans to the retailer as others may be in a similar condition.
- Remove leftover food from the can and store in covered plastic or glass containers in the fridge. Once the food is exposed to the air, oxidation can occur, which leads to 'off' colours and metallic taste (though it's still safe to eat).

Dehydrated or dried foods

- You can keep unopened packets of dried food for at least six months. After that time, they will still be OK to eat though the flavour and texture may have deteriorated.
- Store in a cool, dry place away from direct sunlight. Opened packages of dried fruits keep longer in the fridge.
- Inspect regularly for insect infestation.

Smart storage

It's impossible to say exactly how long you can keep a particular food as it depends on so many factors, such as its freshness and quality when you bought it. Here are a few guidelines:

Meat

Remove its wrapping (if you're not intending to cook it on the day of purchase) and stack it in the meat compartment or in the coldest part of the fridge (at 1–4°C). Cover it loosely with foil or waxed paper to reduce surface drying. Don't use plastic as this makes the meat sweat, which shortens storage time. In the freezer, interleave steaks and chops with freezer wrap so they separate easily, and freeze mince in flat packages for quick defrosting. Throw meat out if it's slimy or smells off. The more the meat is cut, the less time it will last.

■ In the fridge:

— Mince will keep up to two days.
— Steaks, schnitzels, chops, cutlets, diced beef and lamb, mini and boned roasts should be good for two to three days.
— Roasting joints (with the bone in): three to four days.
— Corned beef and sliced ham: one week.
— Cooked meat: up to two days.
— Bacon: four to six days.
— Unopened vacuum-packed meat: four weeks (but check the use-by date).

■ In the freezer:

— Bacon and cooked meat can be stored for up to a month.
— Mince, strips and diced meat will keep for up to two months.
— Other cuts are best used within six months.

Poultry

Stored at ideal fridge temperatures (1–4°C), raw poultry is likely to keep for no more than three days; refrigerated cooked chicken should be eaten within one to two days. In the freezer, raw chicken should keep fresh at least six months.

Fish

Wrap well to prevent it drying out and tainting other foods and keep in the coldest part of the fridge at 1-4°C for up to two days. Frozen, it should keep up to three months.

Eggs

Store in the fridge in their original carton: it protects them, slows down moisture loss, prevents them absorbing odours from other foods and enables you to keep track of how old they are. Fresh eggs should keep well for four to five weeks; boiled eggs in their shells will keep for up to five days. Cracked eggs may be contaminated by salmonella, so throw them out or cook them well (making sure the yolk and white aren't runny) to kill any bacteria.

Fruit

Most fruits keep best unwashed, unpeeled and uncut in the fridge in a plastic bag (the one you bought them in will do) or in the crisper. Generally, quality ripe fruit will keep well for about a week, though apples, pears and citrus fruits may last a lot longer. Unripe fruit can be kept in the fridge and removed for ripening as needed, although stone fruits, pears, tomatoes, bananas and avocados should be kept at room temperature to

ripen, then they can be put in the fridge. Refrigeration will turn bananas black but won't affect the flesh. The flavour of tomatoes will improve if they're removed from the fridge an hour before eating.

Vegetables

In general, store in the fridge in a plastic bag or in the crisper. Mushrooms won't rot so quickly if they're refrigerated in a paper or cloth bag (not a plastic bag). Take onions and potatoes out of plastic bags and store in a cool, well ventilated place, not in the fridge. Potatoes should be kept in a dark spot too, as light slowly turns their surface green, which makes them taste bitter and means they contain solanine, a chemical which is toxic in large doses. You can peel off small green patches, but if they're green all over, throw them away.

If you have a large supply of fresh vegetables and want to freeze them for later use, first wash, peel and cut them, then blanch them by boiling or steaming for a minute or two. Plunge them into cold water immediately after the heat treatment so cooking stops. Commercially frozen vegetables are processed so soon after harvesting, they may contain more vitamins than fresh vegies kept for a long time in your fridge. They should stay at peak condition in your freezer for at least 12 months.

Oils

Exposure to air, heat and light eventually makes fats and oils turn rancid. Store them for up to six months, tightly sealed and away from direct light on a cool shelf or in the fridge.

Herbs and spices

Fresh ones are kept in the fridge. Dried herbs and spices — which gradually lose their strength and flavour when exposed to heat, light and air — may be kept in a cool, dark cupboard, though in summer it's a good idea to keep cayenne, paprika and chilli powder in the fridge. You can seal fresh herbs in a freezer bag and keep them frozen for several months.

Salad dressings and sauces

You can store opened jars of commercial mayonnaise and sauces in the fridge for up to a year if they're kept chilled and tightly sealed. Products such as mayonnaise, mustard and tomato sauce may develop brown or black crusts around the rim of the bottle as a result of oxidation. It's not harmful and doesn't mean the food is going off; just wipe it off.

Uninvited dinner guests

Most of us have probably experienced at some time the nausea, vomiting and diarrhoea associated with food poisoning. Unsafe storage and handling of foods at home may sometimes be the source of the problem. Usually the symptoms are caused by eating food which has been left to stand, cooked or uncooked, at temperatures which permit certain bacteria to multiply. The danger zone is 5–60°C.

There are a large number of micro-organisms that can cause food-borne illnesses. Some of them are:

- ***Campylobacter:*** Found mainly in raw poultry and meat.
- ***Salmonella:*** Most commonly found in poultry, raw meat and dairy products.
- ***Bacillus cereus:*** Can produce toxins in cooked rice which is not refrigerated.
- ***Staphylococcus aureus:*** Many people carry staph organisms in their nose and throat and on the skin and hair. Cold meats, cream cakes, custards, egg dishes and potato salad are particularly likely to support the growth of staph.
- ***Clostridium botulinum:*** Thrives in improperly preserved canned, bottled or vacuum-packed foods and produces a toxin which causes the potentially fatal (and fortunately rare) disease botulism. The CSIRO advises against home bottling of meat, fish and vegetables as they need to be kept above boiling point for hours to avoid the risk of botulism.
- ***Listeria monocytogenes:*** Mainly affects pregnant women, very young and very old people and those with a weakened immune system. It can cause foetal and infant death. To minimise the risk of listeria infection, pregnant women in particular should make sure they eat only freshly cooked or freshly prepared food and avoid eating foods such as soft cheeses, cold meats and chicken, pâté, raw or smoked seafood and pre-prepared or stored salads. *Listeria* is particularly problematic because it can grow at refrigerator temperatures.

Preventing problems

Foods contaminated with dangerous bacteria can look, smell and taste OK. So how can you minimise the risk of food poisoning?

- Wash your hands before preparing food and after handling raw meat, fish or poultry and unwashed vegetables.
- Wash cutting boards, utensils and all surfaces immediately after they've been in contact with raw meat, fish or poultry.
- Wrap raw meat, fish and poultry and place them in a separate compartment in the fridge or on a plate so their juices can't leak onto other foods and contaminate them.
- Never store cooked and uncooked foods in contact with each other.
- Always let food defrost in the fridge or for the recommended time in the microwave. Thaw large pieces of meat, fish and poultry thoroughly before cooking.
- Wipe up spills and scraps immediately as they are a fertile ground for yeasts, moulds and bacteria.
- Never partially cook meat or poultry and finish cooking it later.
- Reheat takeaway or previously cooked food right through to at least 75°C.
- Keep hot food above 60°C and cold food below 5°C.
- Don't leave cooked food standing unrefrigerated. Keep foods within the danger zone of 5–60°C for as short a time as possible.
- Always store leftover poultry stuffing separately in the fridge; if it's left inside the bird it can take several hours to chill, allowing bacteria to multiply to millions.
- Discard food which smells off or is mouldy or slimy. Storing at lower temperatures won't stop further deterioration.

IS IT SAFE TO EAT MOULDY FOOD?

As a general guide, if **hard, fresh foods** (such as fruit and vegetables) develop mould, you can simply cut off the mouldy part plus a 1 cm border, though you should throw out any food which is covered with mould. With hard cheese it's OK to cut off a 1 cm rim if there's a little mould on the outside.

However, you shouldn't eat **processed** and **soft foods** at all if they're mouldy, as invisible threads of mould may extend below the surface. Consuming mould may cause long-term health problems: it can produce toxins which affect the liver, kidneys and immune system. If in doubt, throw it out.

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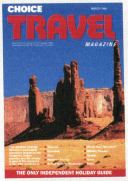

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Subscriber draws are now held quarterly and on April 3, 1995, we'll be holding our fifteenth. The lucky winner will be able to choose any two products from the following tests, published July 1994 to September 1994.

- ☐ Vacuum cleaners (July)
- ☐ Chainsaws (July)
- ☐ Strollers (August)
- ☐ Mobile phones (August)
- ☐ Washing machines (September)

These are products we bought for testing, so you won't be the first to turn them on or set them up. But we'll cover any service problems with a CHOICE warranty that'll match the manufacturers' — just as if you'd bought them new.

All new CHOICE subscriptions and renewals received from members and personal subscribers (including donors of gift subscriptions) by March 31 will go into the draw, unless of course you indicate you don't want to be included.

(If you're not due to renew your subscription during the period, don't worry, we'll be holding other draws during the year — your renewal notice will have the details. And if you're on a two-year subscription you'll be entered on your first anniversary as well as when you renew again.)

Use the order form overleaf

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1. The winner will be drawn from new subscriptions and renewals from personal subscribers (including members and donors of gift subscriptions) received January 1 to March 31, 1995. If you opt for a two-year subscription, you'll be entered on your first anniversary as well as when you actually renew or subscribe.
2. Information on how to enter and prizes forms part of these conditions of entry.
3. Employees, and their immediate families, of the Australian Consumers' Association and its associated companies and agencies are ineligible to enter.
4. Entrants must be residents of Australia.
5. Applications are subject to a verification check and the judge's decision is final. No correspondence will be entered into.
6. The prizes will be delivered free anywhere within Australia.
7. Prizes cannot be taken as cash.
8. South Australian residents may enter the draw by completing the form and posting to: Reply Paid No. 24, ACA, 57 Carrington Road, Marrickville 2204, without subscribing to the magazine. Only one entry per person is permissible through this method.
9. Last date for receipt of entries to the draw is March 31, 1995. No responsibility accepted for lost, late or misdirected mail.
10. The draw will be conducted at the office of the Consumers' Association at 10 am on April 3, 1995.
11. The winner will be notified by letter and published in the earliest feasible issue of CHOICE after that.
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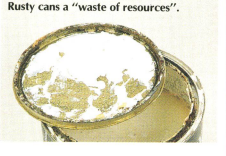
Rusty cans a "waste of resources".



Rusting paint tins

We do most of our own decorating and to save money we usually buy four-litre or bigger cans of paint. We have used Dulux brand paints inside and outside for many years and have been satisfied with the paint. We are now changing brands. Our reason is the quality of the cans. They seem to last only a year or so before they rust through on the bottom or at the join.

We use only wooden paddles for stirring so are not scratching the plating; the cans are just not up to the job.

We are trying other brands in the hope that one with good paint has good cans too.

Being somewhat cynical, I realise that the short can life means more sales as the leftovers will soon be useless, but the waste of resources seems criminal to me.

So could you please campaign for better cans. Could you also campaign for two-litre cans. One litre is not enough for one room; four litres is far too much. The price of one four-litre can is about the same as two one-litre cans, but the wastage is high. We must consider the resources used and wasted.

John Carter
Old Toongabbie, NSW

According to a spokesperson for Dulux, the company is looking at its paint cans to find out if there is a problem.

The company says it has sold two-litre cans in the past, and based on that experience doesn't believe there is currently sufficient demand to justify the addition of a two-litre can to its range of paints. However, it says it regularly updates its products based on information from consumer research, and so welcomes feedback from customers.

Letters

Energy schemes already in place

I read with interest the recent article on the EnergyCard. The article promotes the program as a fairly good initiative in an attempt to encourage consumers to do the right thing environmentally with solar hot water systems, and eventually reverse-cycle air conditioners and relevant building products.

It would seem, however, that the government is a bit slow to jump on the bandwagon. Armidale City Council and New England Electricity both have schemes in place that are better than the proposed EnergyCard (from the consumer's point of view). Armidale City Council currently offers an interest-free loan for insulation for new houses (on average worth around $3000), while New England Electricity offers interest-free loans for heat-exchange solar hot water systems, heat pumps and reverse-cycle air conditioners. Being interest-free, this is even better than the EnergyCard!

The local authorities are trying to "do the right thing", aiming to be the most energy-conscious region by the year 2000. As joint bodies, they recently commissioned a solar, passive, energy-efficient, environmentally friendly, five-star-design display home, to encourage people to build well and wisely.

Armidale, on the New England tablelands, NSW (six hours north of Sydney), has a climate that ranges from −6°C and snow in winter, to 34°C in summer, sometimes with a temperature difference of 20–25°C in one day. It makes designing an energy-efficient home especially challenging.

You might like to let others know that there are already innovative systems in place, and/or other readers may come forward with similar schemes in their areas. Either way, it all adds up to a more positive future for our children and their children after them.

Mahalath R Halperin
Architect, Mahalath Halperin Architects
Armidale, NSW

Australian-owned, but product of China

Yesterday I purchased a packet of sesame seeds which clearly states on the packet that it's a wholly Australian-owned company. Even the Aboriginal place names tended to imply that the product was grown in Australia. So, without looking any further, I popped it into my shopping trolley.

It was not until I got home and emptied the packet into an appropriate jar that I noticed on the back of the packet, 'Product of China'.

This doesn't seem right to me.

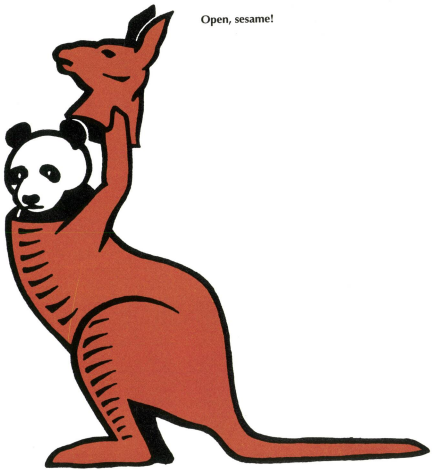
Paul Howard
Broadbeach Waters, Qld

A spokesperson for the distributor of the sesame seed, Mellow Yellow Products, said the packaging was not intended to mislead.

He said the company uses the "Wholly Australian Owned" logo on the front of the package because they believe consumers like to know the company is Australian-owned and all the profits stay in the country. He says the company sources its products from within Australia whenever possible, even if these products sometimes cost more.

At the time those seeds were packaged, the company says it was looking at Australian-sourced sesame seed, which subsequently proved not to be of high enough quality for retail sale. Because of the uncertainty when the packaging was printed, the 'Product of China' label was later printed on the back, along with the use-by date.

This is another example of the confusion which exists for consumers trying to buy Australian. As we reported in January CHOICE, the labelling laws are being reviewed and we will keep you up to date with our quest for 'Truth in labelling'.



Open, sesame!

PERSONAL CD PLAYERS

Are expensive personal CD players really that much better than cheaper ones?

PERSONAL CD PLAYERS are becoming more popular — after all, they allow you to listen to your favourite CDs almost anywhere, any time.

For this test we purchased seven of the cheapest players on the market and two of the most expensive, to see how well they performed and find out whether it's worth paying an extra $200 or more for the top-of-the-line models.

The more expensive models have features which make them easier to use, and they also sounded good. But with a difference of around $450 between the most expensive model, the SONY D-335, and our **Best Buy**, the SONY D-131, we wonder whether a remote control, memory and a few other features — the main differences — are worth so much extra money.

WALK DON'T RUN

Don't buy a personal CD player for jogging or bike riding — you're going to be disappointed because the movement makes the players jump and miss some of the recording. In fact, the instructions of four of them stated they shouldn't be used in this way. However, with the exception of the SANYO CDP-41, all the players passed a sedate walking test, and can probably be used satisfactorily on train and bus rides.

The two most expensive models, the SONY D-335 and TECHNICS SL-XP470, feature a memory buffer which allows them to hold a few seconds of sound in memory. If knocked while playing, they continue playing from memory until they can pick up from where they left off. In theory, this should result in uninterrupted listening.

The first SONY D-335 we bought performed badly in our walking test with its memory buffer — 'electronic shock protection' (ESP) — switched on. Suspecting a faulty player, we obtained another, which performed much better.

While these memory buffers reduce the number of dropouts, they don't stop them completely. Even with the memory buffer switched on, these players still couldn't be used for jogging or bike riding. In addition, using the buffer reduces battery life.

SOUND QUALITY

All the models have both a headphone jack and a line output, which means they can be connected to a hifi system. All except the AKAI PD-X54 came with a cord to allow easy connection. Two models, the SONY D-335 and AKAI PD-X73, also feature digital output, with the SONY having a digital optical jack. This

Our Best Buy, the Sony D-131, was almost as good as the top-performing Technics SL-XP470 and over $200 cheaper.

TECHNICS SL-XP470

SONY D-335

SONY D-131

TECHNICS SL-XP170

allows you to make direct digital copies of CDs should you have access to a digital recorder such as a DAT, MiniDisc or DCC system (see *Digital Recording*, CHOICE, June 1993, for more information on these systems).

With the exception of the SANYO, the sound quality of most models for connection to a hifi system was very good — on a par with full-size CD players we've tested in the past. The SANYO, while still OK, was not quite as good as the others. The differences in sound quality between the players when used with hifi sytems would probably not be noticed by the average listener.

Again with the exception of the SANYO, all the models were supplied with in-ear headphones (see *Pain in the ear?* overleaf). The SANYO came with an over-the-head type of headphone. While all the models were capable of producing reasonable sound quality from the headphone jack, some were let down by the poor quality of their headphones.

If you're concerned about damaging your hearing — and with headphones feeding sound directly down the ear canal, it pays to be careful about volume — both SONY players feature automatic volume limiters. When switched on these limit the volume when it reaches a certain level.

Power

All the models come with a mains adaptor, but can also take either alkaline or rechargeable AA batteries.

Every player also comes with a built-in battery charger, and all provide indication when battery charge is low. However, only the two SONY players and the TECHNICS SL-XP470 indicate when a battery is charging or is fully charged. The absence of such a display on the other players might make it difficult to know when the batteries are fully charged, and lead to incomplete recharging.

BEST BUY

SONY D-131 ..... $240

While the TECHNICS SL-XP470 achieved the best overall score, and includes extra features such as a 'digital signal processor' which simulates hall, live or church listening conditions, the SONY D-131 did almost as well, and was cheaper by more than $200.

WHAT TO LOOK FOR

Here are a few pointers on finding the right personal CD player for you.

- Take your favourite CD with you when shopping for a CD player, and use it to test the sound quality — that way you'll know what your style of music sounds like on that player.
- Make sure the tone controls can be adjusted to suit your listening preferences.
- Try the headphones on to see whether they're comfortable.
- Make sure the model has an on/off switch or a hold control, so that when you put it in your bag it won't be accidentally turned on.
- Check that the controls don't interfere with each other — for example that the headphone plug doesn't sit over the volume control when plugged in, as was the case with the **AKAI PD-X73, SANYO CDP-41** and **SONY D-131**.
- Look for at least a 12-month warranty. One player we tested, the **TEAC PD-P9**, had only a three-month warranty.
- Finally, test any special features yourself. Some may sound great in theory, but in practice aren't very useful.

Portable CD players

Brand/model (in rank order)	Manufacturer/ distributor	Origin	Target price ($)*	Warranty (months)	No of AA batteries	Charging indication	1 Hold	2 Intro play	3 Shuffle play	4 Resume play	5 Time track
TECHNICS SL-XP470	Panasonic	Japan	470	12	2 *(B)*	✓	✓		✓	✓	✓
SONY D-131	Sony	Malaysia	240	12	2	✓	✓	✓	✓		✓
SONY D-335	Sony	Japan	690	12	2 *(B)*	✓	✓	✓	✓	✓	✓
TECHNICS SL-XP170	Panasonic	Japan	240	12	2		✓		✓	✓	✓
AKAI PD-X55	Akai	China	220	12	4 *(B)*		✓	✓	✓		
AKAI PD-X54	Akai	China	200	12	4 *(B)*		✓	✓	✓		
AKAI PD-X73 *(A)*	Akai	Japan	240	12	4 *(B)*		✓				✓
TEAC PD-P9	Teac	China	190	3	4		✓	✓	✓		
SANYO CDP-41	Sanyo	China	220	12	2						

* Prices shown are a good target to aim for when shopping around, based on nationwide checks in November and December 1994.

(A) This model was discontinued in February 1995, but is likely to be still available in shops.

(B) These models were supplied with rechargeable AA batteries.

(C) With memory buffer on; batteries should last longer with it off.

PAIN IN THE EAR?

Our testers found some of the in-ear headphones provided with the personal CD players very uncomfortable — even when worn for a short time. Most of them are circular in shape (see picture below) and designed to sit just inside the ear. Since most people don't have round holes for ears, some of these designs may be uncomfortable for certain people — it really depends on the shape of your ear. Always try the headphones for comfort when you're buying.

The Technics SL-XP470 comes with in-ear headphones which are adjustable (see photo below). Small flanges on the earpiece can be slid around to fit the shape of your ear. While maybe not the perfect solution, they go some of the way to make in-ear headphones more comfortable.

HOW RELIABLE ARE CD PLAYERS?

We surveyed a sample of our subscribers about the reliability of their home and portable CD players, asking them if their CD player had needed repairs in the previous 12 months. The results are given below for the most popular brands; the number in brackets is the number of players of a particular brand in the survey. On average, just under 7% of players in the sample needed repairs during the past year, at an average cost of around $100. Note that the results of the survey are for CD players of all types, not just for the models included in our test.

Brand (sample size)	% not needing repair
CDC (174)	98
JVC (99)	98
Sanyo (177)	97
Panasonic (169)	95
Sony (738)	94
Philips (238)	93
Sharp (225)	93
TEAC (327)	93
Kenwood (140)	92
Marantz (96)	92
Technics (250)	92
Yamaha (274)	91
Akai (372)	90
NAD (52)	90
Pioneer (331)	88

We also asked our survey respondents if they would buy the same brand of CD player again:

Brand (sample size)	% who would buy again
NAD (52)	98
Panasonic (166)	97
Kenwood (139)	95
Sony (715)	95
JVC (97)	94
Yamaha (271)	94
Pioneer (326)	93
Technics (243)	92
Sharp (217)	91
Sanyo (166)	90
Marantz (93)	89
CDC (172)	87
Akai (363)	85
Philips (236)	83
TEAC (316)	81

bte ol	7 Background light	Battery life (hours)	8 Battery life score (%)	9 Listening test score (%)	10 Technical score (%)	11 Ease of use score (%)	12 Overall score (%)	Brand/model (in rank order)
		6 *(c)*	60 *(c)*	65	94	96	80	**TECHNICS** SL-XP470
		9	90	75	89	60	76	**SONY** D-131
	✓	7 *(c)*	70 *(c)*	75	93	73	75	**SONY** D-335
		9	90	65	93	54	72	**TECHNICS** SL-XP170
		8.5	43	55	97	66	62	**AKAI** PD-X55
		8.5	43	55	98	54	57	**AKAI** PD-X54
	✓	6	30	65	92	58	56	**AKAI** PD-X73
		10	50	30	95	53	55	**TEAC** PD-P9
		4	40	40	80	29	42	**SANYO** CDP-41

COMPARABLE MODELS

According to the manufacturer, the **SONY D-131**, which we tested, is similar to the **D-137CR**, which has a built-in remote receiver, and the **D-132CK**, which comes with car accessories. We also tested the **D-335**, which according to the manufacturer is similar to the **D-232**, except that the **D-232** has a three second memory buffer rather than a six-second buffer.

We tested the **TECHNICS SL-XP470**. According to the manufacturer, the **SL-XP471C** is similar, but comes with a separate remote control handpiece, car cassette and cigarette lighter adaptors.

FEATURES

All the players have the following features: program play, repeat play, skip/search and a line out for connecting to a stereo system. All indicate low battery, track number, play mode, total number of tracks and total time.

1 Hold

The hold button locks out all controls and prevents the player being turned on or off by accident.

2 Intro play

This function plays the first 10 to 15 seconds of each track in turn, allowing you to preview each track on the disc.

3 Shuffle play

When this play mode is selected, the model will play all the tracks on a disc in random order.

4 Resume play

This switch allows you to resume playing from where the player was stopped. This is different from a pause button as it allows you to stop the disc, thus conserving battery life.

5 Time into track

This shows how long a track has been playing.

6 Remote control

Located on the headphone lead, the remote control can be clipped onto your clothing (see the photo below). The **AKAI** remote has controls for stop, play/pause, search/skip and volume. The remote controls of the more expensive **SONY** and **TECHNICS** models also have transport controls, as well as play mode controls and a display.

7 Display background light

A background light makes it easier to read the displays, especially in artificial or dim light.

8 Battery life score

The battery test was conducted using alkaline batteries. The battery life score was weighted by taking into account the number of batteries required by each model.

9 Listening test score

We listened to a variety of music using the headphones supplied with each model. Technical measurements showed all the players provided reasonable-quality sound to the headphones, so we concluded that the models which performed worse in the listening test were let down by the quality of their headphones.

10 Technical score

The technical score was based on tests from the line out for frequency response, harmonic distortion, channel separation (spill of unwanted sounds between the two stereo channels) and signal-to-noise ratio. All the models did well in a linearity test, which measures how closely changes in volume level as recorded on a disk are reproduced by the CD player.

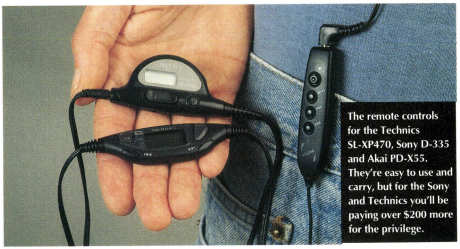
11 Ease of use score

The ease of use score was calculated taking into account a number of factors, including a walking test, controls, remote control, battery charge indication, quality of instructions, and bass and treble controls.

12 Overall score

The listening test and the technical score both contribute to sound quality; we weighted them as 15% each of the overall score, making sound quality 30%. All CD players give good audio quality, so we've weighted the other aspects quite highly in order to highlight the differences between players.

- Battery life: 30%
- Sound quality: 30%
- Ease of use: 40%



The remote controls for the Technics SL-XP470, Sony D-335 and Akai PD-X55. They're easy to use and carry, but for the Sony and Technics you'll be paying over $200 more for the privilege.

DRIVING YOUR DISCS

If you'd like to use your personal CD player in the car, a car CD adaptor could be what you're looking for — but they're not a perfect solution.

CAR CD ADAPTORS ALLOW YOU to play CDs on your personal CD player through your car's existing stereo system.

The two models we looked at, the DISCWASHER and SOUND FEEDER, use different methods to achieve this.

The SOUND FEEDER works by feeding the sound output from the CD player's headphone jack to an FM modulator, which is plugged into the car's cigarette lighter socket (see photo). You listen to your CDs by tuning your radio to the modulator's frequency. Alternatively, the radio can be tuned to an unused frequency and the modulator frequency changed by a thumbwheel until the sound is heard.

The other model we tried, the DISCWASHER, feeds the sound to a dummy cassette, which is inserted into the car's cassette player. The sound from the portable CD is heard through the car cassette player speakers, with volume, tone and balance adjusted using the normal cassette deck controls.

HOT STUFF

We thought we'd found a technical problem with the SOUND FEEDER: the power adaptor plugged into the cigarette lighter socket melted after a few hours' use. Thinking it might be a one-off fault, we bought another SOUND FEEDER. This one came with an instruction sheet our first sample didn't have, which included an important piece of information about connecting the power supply to the CD player. When we followed these instructions, the SOUND FEEDER didn't have a problem with overheating. The manufacturer needs to take more care when packaging the product.

In addition to this, reception from the SOUND FEEDER's FM modulator wasn't too good. The tuning of the modulator drifted over time, requiring retuning. As it drifts, you lose stereo reception in some situations. Despite these problems, the sound quality is OK, and the cabling is long enough to allow the CD player to sit out of the way on the back seat.

The DISCWASHER was easy to use: just a matter of putting the dummy cassette into the car's cassette player, plugging the connection cable into the CD player's headphone jack and pressing play on the CD player.

The sound quality is good. The main drawback is the short length of cable between the dummy cassette and the CD player. It easily reaches the front passenger seat, but not the back seat.

A car cigarette lighter adaptor is also available, which allows the CD player to run from the car's cigarette lighter socket; it wasn't included in the package we bought so we couldn't test it.

BOUNCING AROUND

Both models suffer from problems which are inherent to portable CD players. They can't compensate for mistracking caused by the CD player bouncing around — which is unavoidable in a car. Our tester found that if a passenger held the unit on their lap this problem was reduced, though this is hardly a desirable solution for any length of time.

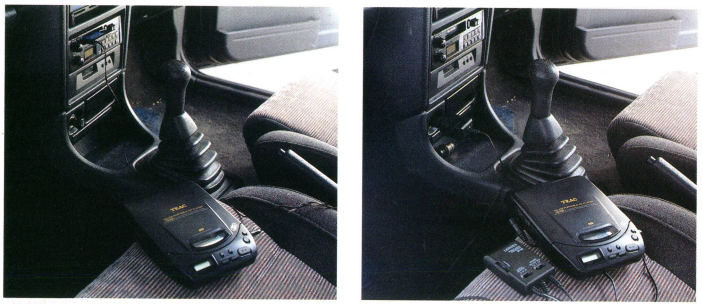
In addition, neither adaptor prevents the CD player from sliding around the passenger compartment during acceleration, turning or stopping.

While we only looked at two car CD adaptors, we found the DISCWASHER had slightly better sound quality, and we liked its simplicity in use.

PRODUCTS TESTED

DISCWASHER	$30
SOUND FEEDER	$50

* In the case of the Sound Feeder, the brand on the actual adaptor was Lenoxx, while the brand on the packaging was Sound Feeder.



The Discwasher, left, operates through your car's cassette player, while the Sound Feeder's FM modulator tunes into your radio.

REPLENISHING WHAT HARD WORK TAKES OUT

Michael Jordan drinks Gatorade for that deep-down body thirst. Cathy Freeman uses Sportplus to recover from her races, and Hayley Lewis reaches for a lemon Lucozade when she's running low on energy. At least that's what television commercials want you to believe, but does the average exerciser really need a special sports drink to replace the fluids and energy lost during sports?

SHE'S NOT INTO BASKETBALL, football or weight training, but is on her rollerblades for a couple of hours a week. Drinking a sports drink doesn't make her feel any different from having a fruit juice, but it's "cool" to be seen drinking a sports drink in front of her peers. "You feel like a real sporty person when drinking it during sport," says the 17-year-old high school student.

"They make me feel that me and [US basketball star] Michael Jordan share a common interest," says another 17-year-old student, who plays basketball every day, runs and plays soccer as well. "It does seem to give you a sense of superiority to be able to drink something that top athletes take," says another, though she qualifies her remark: "I think they're not worth the money if you're not really doing any strenuous exercise."

Since the 1960s, when LUCOZADE first appeared in our shops, the number of sports drinks available and their composition has changed significantly. For instance, they're no longer as high in salt (or sodium) as in the early days, when it was thought they should mimic the composition of sweat lost during exercise.

The way sports drinks are marketed has also changed significantly in the past three years, as various 'new-generation' isotonic sports drinks have appeared on the market (see *Isotonic or hypertonic?*, overleaf). Advertisements no longer just target athletes in training, but also health and lifestyle-conscious people, particularly teenagers and children. Television commercials often feature famous athletes promoting a certain drink, and there's no doubt the style of the advertisement addresses young consumers.

To get a general feeling for the popularity of sports drinks and the impact of advertising on young adults, we asked some Year 11 students, male and female, at eight high schools in Sydney's inner west about their sporting activities, their

ISOTONIC OR HYPERTONIC?

All sports drinks are designed to provide fluid to prevent dehydration, and carbohydrate in liquid form which is easy to consume. The brands which are becoming increasingly popular with young people contain a variety of sugars (glucose, fructose, sucrose and maltodextrins) to replace lost energy during and after exercise. **Isotonic** sports drinks contain carbohydrates at the same concentration as blood plasma (between five and 10 g/100 mL, or 5–10% weight per volume (w/v)) so the body can easily absorb them. Lower levels don't provide enough carbohydrates to top up blood sugar levels during intense or long exercise; concentrations above 10% w/v can take longer for the body to absorb.

Hypertonic sports drinks, or high-carbohydrate supplements, usually contain carbohydrate in higher concentrations than blood plasma (20–25% w/v). They're suitable for athletes in heavy training who might require a more concentrated source of carbohydrates to boost their energy supply. A wide variety of hypertonic drinks, dietary supplements and meal replacements caters for this market — they're not included in this report.

People who exercise a few times a week and maintain a healthy diet will gain little benefit from drinking a hypertonic preparation during exercise, unless the type of activity requires lots of energy and produces little sweat — such as cross-country skiing. During most other types of exercise, hypertonic drinks — consumed without other fluids — may even increase the risk of dehydration rather than prevent it, as they take longer to absorb than water. Soft drinks and fruit juice also contain too much carbohydrate for fast absorption; if used, they should be diluted 50:50.

LUCOZADE nearly qualifies as a hypertonic drink; the original, bright orange liquid in the 750 mL bottle contains much more carbohydrate than isotonic drinks. Although the newer, pale-coloured lemon or lime-flavoured drink in 300 mL bottles has a reduced carbohydrate content, it's still nearly twice as high in carbohydrate as other isotonic sports drinks. But we've included both **LUCOZADE** drinks in the table on page 44, as most people think they are sports drinks and they're increasingly marketed as such.

experiences with sports drinks and their opinions of sports drinks advertising. Judging from their comments, sports drinks marketing seems to work.

Nearly all of the 84 who responded had seen television commercials for sports drinks, and most had tried at least one brand. Of the 80% who drank them regularly, more than two thirds had two or more each week.

WHO NEEDS THEM?

Commercials and promotions for sports drinks promise, at least implicitly, to boost your energy and increase your athletic performance. But do active young adults or other people who exercise regularly but don't aspire to compete in the next Olympics really need a special sports drink to keep up their energy and fluid levels during and after exercise?

Isotonic sports drinks have some benefits. They're easy to consume during exercise; they prevent dehydration and top up blood sugar levels at the same time. They're convenient for athletes who exercise more than once a day at high intensity, as their busy training schedules may make it difficult to consume enough of the right food and drink needed for their increased energy demands and fluid losses. But even high-performing athletes can survive without sports drinks, as long as they're consuming enough carbohydrate-rich foods and drinks. The same certainly applies to 'average' exercisers.

REPLACING LOST FLUIDS

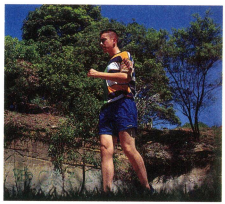
The evaporation of sweat is the body's natural method of keeping cool. Most people sweat an average of 1 L each hour when exercising; the exact amount depends on how hard and for how long you work your body, how warm and how humid it is. The size of your body and your degree of fitness also play a part. Bigger people lose more sweat, as do fit people because their bodies have adapted to keeping cool during exercise.

Weighing yourself before and after a work-out can give you an indication of the amount of fluid you've lost. One kilogram less on the scales means you've lost 1 L of fluid. To prevent dehydration, which in extreme cases can lead to heat stroke and death, the amount of fluid that will be lost during exercise has to be replaced — ideally before, during and after sporting activities.

EXERCISING? YOUR DIETARY NEEDS

These guidelines give you an idea of how much fluid and energy you need to replace during and after exercise of different intensity and duration. Sports nutrition consultant Fiona Pelly prepared the guidelines, which also indicate what you should eat or drink to restore body fluids and energy stores.

Carbohydrate with a 'low glycaemic index', such as some fruit (eg banana or apple), is absorbed slowly into the blood, and might provide a more continuous supply of glucose (energy) during exercise. While further research is needed to confirm this hypothesis, it's probably a good idea to eat a piece of fruit about half an hour before you start to exercise.



Exercise for less than one hour at low to moderate intensity

(Such as aerobics, circuit class, step aerobics, power walking, light resistance or weight training.)

Before: Drink water.

During: Sip 150–200 mL water every 15–20 minutes.

After: Drink 500 mL to 1 L fluid over the next hour. Try to eat some high-carbohydrate food (such as cereal, bread, fruit, pasta, rice or potato) in the next two hours, especially if you intend to exercise again later in the day.

Better than water?

The drink you choose to replenish fluids is up to you. What's important is that you drink enough to replace the fluids lost in exercise. In our mini-survey of high school students, most preferred to drink water during and after exercise, but sports drinks were a popular drink to have after sport as well. Water still remains the cheapest and most convenient drink for fluid replacement and it won't burden you with extra calories if you want to lose weight. Sports drinks are of little benefit if you exercise three to four times a week for less than an hour at moderate intensity for general fitness or to improve muscle tone, unless you don't like the taste of water and aren't likely to drink enough.

Sports drinks *are* beneficial for athletes in heavy training, as they have higher fluid and energy losses than ordinary people and need to replenish fluids *rapidly*. Their bodies take longer to absorb fluid during very high-intensity exercise because gastric emptying — the time it takes before fluids leave the stomach and are absorbed from the small intestine — is slowed. Most new-generation sports drinks claim to replenish lost fluid rapidly, in some cases faster than water. That's because they contain high enough levels of salt to enable the body to absorb them faster than water on its own (see *Sodium and potassium* on page 45).

About half the drinks we looked at contain enough sodium for rapid absorption. While this is less important for most people's day-to-day activities, it might improve your performance if you're exercising strenuously more than once a day, or during a longer-lasting sporting event, such as a fun run.

Contrary to popular belief, sodium is not added to sports drinks to replace the amount we lose in sweat — a normal meal provides us with sufficient, often excessive quantities of salt. It is added to sports drinks to improve absorption rates and may improve the taste of the drink and offset the sweetness of added sugars. Some studies have shown that people may prefer a slightly salty-tasting drink after exercise and when dehydrated.

Replenishing energy stores

Our bodies need energy to exercise muscles. Energy mainly comes from the carbohydrate in food; it's stored as glycogen in the muscles to help us move and in the liver as a reserve to top up blood sugar levels. Exercising depletes the glycogen stores in your body. The length of time you can exercise before your body tells you to slow down depends on the intensity of the work-out and a few other factors. Athletes can store more glycogen than people who don't exercise regularly; men can store more than women, who generally weigh less; and a high-carbohydrate diet also enables you to store more glycogen. An average person can exercise for about 60–90 minutes at moderate to high intensity before glycogen stores are depleted.

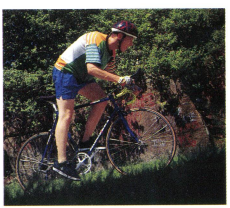
To exercise for longer or at a higher intensity, you have to replenish your glycogen stores *before* fatigue sets in — by consuming 30–75 g of carbohydrate each hour (depending on your body weight and metabolism). About two to five slices of bread will provide you with the necessary amount, if you can tolerate solid food between sprints or during a game. Sports drinks are an alternative and help prevent dehydration at the same time. For example, 500 mL of POWERADE or 300 mL of LUCOZADE

Exercise for less than one hour at high intensity

(Such as athletics and swimming events, heavy resistance or weight training.)

Immediately before and during: Sip 150–200 mL water every 15–20 minutes or an isotonic sports drink or diluted soft drink before and regularly between sprints/sets.

Immediately after: Replace lost energy with 250–500 mL hypertonic sports drink, 1 L isotonic sports drink, 800 mL made-up cordial, 500 mL soft drink or by eating at least 50 g of carbohydrate (for example, one low-fat fruit yoghurt plus a banana or one sports bar). Follow with high-carbohydrate snacks or a meal, and drink plenty of water.



Exercise for one to three hours at moderate to high intensity

(Such as some team sports, cycling, organised fun runs, marathons.)

Immediately before: Sip water.

During: For the first hour sip water or an isotonic sports drink; from the second hour on, sip an isotonic sports drink containing both carbohydrate (6–8% w/v) and sodium (230–460 mg/L) or diluted soft drink (50:50) — aim for 750 mL to 1 L per hour. If you prefer water, eat 50 g carbohydrate as well (for example, a packet of jelly beans) over the last hour.

After: Aim for a total of 1–2 L fluid over the first hour. This could be made up of 1 L isotonic sports drink or 800 mL made-up cordial or 500 mL soft drink in the first 15–20 minutes, followed by water. Alternatively, drink 1–2 L water and eat at least 50 g carbohydrate (for example, an unbuttered bread roll with honey) in the first hour. If you're bruised, have torn a muscle or sustained other soft-tissue injuries, drink 250–500 mL of a high-carbohydrate (hypertonic) drink in the first 15 minutes; follow with fluid replacement (more water) and high-carbohydrate snacks and meals.

Exercise for more than three hours at moderate to high intensity

(Such as triathlon or ultra-endurance events.)

Immediately before: Sip water.

During: Sip an isotonic sports drink which contains carbohydrate (6–8%), sodium (460–690 mg/L) and potassium (115–175 mg/L). Aim for 750 mL to 1 L per hour; *or* drink water and eat at least 50 g carbohydrate every hour from the second hour on. You may prefer a combination of sports drink and solid food.

After: Follow the guidelines for exercise of one to three hours (see left).

Isotonic sports drinks

1

Brand/product (in alphabetical order)	Type	Origin	Type of carbohydrate
CENOVIS SPORT Energy & Recovery Formula	Powder	Australia	Glucose, sucrose, glucose polymers
EXCEED Fluid & Energy Replacement	Liquid, powder	Australia	Glucose polymers, fructose
EXTRA COOL	Powder	Australia	Sucrose, glucose polymers
GATORADE	Liquid	Australia	Sucrose, glucose, fructose
HORLEYS REPLACE	Powder	New Zealand	Glucose, glucose polymers, fructose
ISOSPORT	Powder, still liquid, EDGE carbonated liquid	Australia	Glucose, glucose polymers, sucrose, fructo
ISOSTAR	Liquid	Netherlands	Sucrose, glucose, fructose, glucose polym
ISOSTAR	Powder	Switzerland	Sucrose, glucose, fructose, glucose polym
LUCOZADE Original *(A)*	Liquid	Australia	Glucose
LUCOZADE Lemon or lime *(A)*	Liquid	Australia	Glucose, fructose
MAXIMUM	Powder	Australia	Glucose polymers
MUSASHI Energy	Liquid	Australia	Glucose polymers
NUTRA-LIFE Nutra Sport Carboblast	Powder	New Zealand	Glucose polymers, glucose, fructose
NUTRA-LIFE Nutra Sport Restore Cola *(B)*	Liquid	New Zealand	Glucose polymers, fructose, glucose
NUTRA-LIFE Nutra Sport Restore Fluid & Electrolyte Replacement	Powder	New Zealand	Glucose polymers, fructose, glucose
POWERADE	Liquid	not stated	Sucrose, glucose polymers
SCHWEPPES SPORT PLUS	Liquid (still and carbonated)	Australia	Sucrose, glucose
STAMINADE Fluid and Electrolyte Replacement	Powder	Australia	Glucose

(A) Lucozade is not an isotonic but almost a hypertonic drink. We've included both the original (orange-coloured) and the newer (lemon or lime) versions as they're generally perceived and consumed as isotonic sports drinks. For more details see *Isotonic or hypertonic* on page 42.

(B) Also contains caffeine (level not stated). While caffeine may improve performance in endurance exercise of more than one hour in some people, it's banned in international competitions. Athletes should avoid overuse.

(C) No nutrient panel on still liquid; values taken from carbonated liquid.

(D) Slightly lower in sodium than other isotonic sports drinks. While this is less important for 'average' exercisers, endurance athletes consuming sports drinks for maximum fluid and mineral replacement should aim for a drink with higher sodium levels.

(E) Very low in sodium. While it's OK for the 'average' exerciser, it's not recommended for athletes requiring rapid fluid absorption or for ultra-endurance athletes.

The values in this table are taken from nutrition information panels of citrus-flavoured sports drinks (except for Lucozade Original; see *(A)* above).

(the newer lemon or lime varieties) contain about 40 g of carbohydrate. Diluted soft drink or diluted fruit juice can provide you with carbohydrate as well. See *Exercising? Your dietary needs* on page 42 for details.

Helping your muscles recover

Carbohydrates consumed immediately *after* exercise help strained muscles recover faster. This is important for people who exercise more than once a day at high intensity or follow a strenuous daily weight training routine. If you work out hard, follow with an hourly carbohydrate intake of about 1–2 g/kg of your body weight until you eat your next normal meal. You may prefer a combination of sports drinks, high-carbohydrate supplements (hypertonic drinks), water, soft drinks and solid foods; see *Exercising? Your dietary needs* for details.

An average 500 mL serving of an isotonic sports drink contains enough carbohydrate to top up the blood sugar levels of an average-size woman after exercise, but isn't enough for an average-size male athlete. He would need about 1 L of an isotonic drink, 250 mL of a hypertonic drink, or a combination of fluids and carbohydrate-rich food.

A 'healthy' alternative?

One of the students we surveyed was concerned that sports drinks were sold at school canteens: "... because the kids use them as normal drinks and that's not what they're [supposed to be] used for!" Others thought they should be promoted to appeal to a wider range of people and age groups. "They're fantastic," said one, "I not only use it as a drink after sport but as a substitute for soft drinks. It's the better alternative."

Sports drinks generally contain a variety of sugars, some minerals (generally sodium and potassium; some might also contain magnesium, calcium and chloride), flavours and colours. They contain no magic potions that can harm you if you drink them when you're not exercising. Their sodium levels are comparable to those of milk.

Sugar levels are lower in sports drinks than in soft drinks, but that doesn't make them 'healthy' alternatives. Indeed, people may put on weight if they drink excessive amounts of sports drinks or soft drinks, have an unhealthy diet and lead a sedentary lifestyle. And like any sweet drink, sports drinks may discourage children from drinking water. As their sugar content can suppress a normal appetite, they may become substitutes for meals.

Last but not least, there's the cost factor. Some sports drinks may be cheaper than soft drinks, but they definitely cost more than water, which serves the average exerciser just as well for fluid replacement.

Cost comparisons

Most of the new-generation isotonic sports drinks come in handy, ready-to-drink serving sizes of between 250 and 500 mL. Some non-carbonated drinks are also available as powders, which have to be prepared with water, and generally work out cheaper. For example, we paid $1.12 for a 250 mL bottle of **ISOSTAR** in a supermarket and $7.89 for the 400 g tin of **ISOSTAR** powder, which makes 5 L of isotonic sports drink with slightly more carbohydrate. This works out at 40 cents for 250 mL — a saving of 72 cents.

	3	3
bohydrate w/v)	Sodium (mg/L rounded)	Potassium (mg/L rounded)
	580	240
	200 *(D)*	180
	230 *(D)*	160
	410	120
	230 *(D)*	190
	460	180
	400	180
	400	180
3	300 *(D)*	20
5	290 *(D)*	730
	50 *(E)*	8
nutrition panel		
	340	180
	400	100
	430	80
	250 *(D)*	140
(C)	400 *(C)*	300 *(C)*
	230	200

1 **Type of carbohydrate**

Glucose, glucose polymers (maltodextrins) and sucrose all seem to be absorbed at about the same rate and so assist glycogen replenishment in the body. Glucose polymers may empty slightly faster from the stomach into the intestines (and thus be absorbed slightly faster) and taste less sweet. Fructose is less quickly absorbed into the body and can cause gastric upset and diarrhoea, so drinks based primarily on fructose (such as fruit juice) may not be as beneficial during intense exercise.

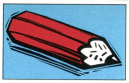
2 **Carbohydrate**

Most isotonic sports drinks contain 6–8% weight-per-volume (w/v) carbohydrate; lower levels are insufficient to top up blood sugar levels during exercise. Concentrations above 10% w/v slow down the rate at which fluids leave the stomach and are absorbed from the small intestine. Hypertonic drinks contain 20–25% w/v carbohydrate and are designed as dietary supplements for athletes in heavy training.

3 **Sodium and potassium**

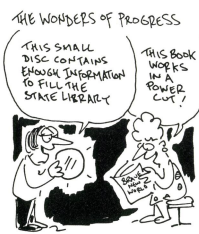
A normal meal easily replaces the amount of sodium and potassium lost in sweat during exercise; healthy kidneys closely regulate sodium losses. Sodium is added to sports drinks because the human body can absorb fluids containing about 400–1100 mg/L sodium faster than water. The faster your body is able to absorb fluids and minerals, the less susceptible you are to dehydration. You can hence exercise for longer or at a higher intensity. Sodium may also be added to offset the sweetness of added sugars; after exercise and when dehydrated, you may prefer a slightly salty-tasting drink.

The addition of other minerals may slightly speed up the absorption rate, but that's not really necessary during moderate exercise. Small amounts of potassium (about 80–195 mg/L) may help maintain the balance between fluid and minerals within cells.



WHAT DO YOU KNOW?

1 CD-ROM is said to be the fastest-growing field in personal computers. This is because it provides computer users with:
A) Enhanced computer processing power.
B) Large amounts of information on compact disk.
C) A fast and efficient link into the Internet.


THE WONDERS OF PROGRESS
THIS SMALL DISC CONTAINS ENOUGH INFORMATION TO FILL THE STATE LIBRARY
THIS BOOK WORKS IN A POWER CUT!
BOOKS

2 Softwoods are always much softer than hardwoods.
True or false?

3 ABS is available as an option for certain makes of car. It stands for:
A) Automatic braking system.
B) Anti-lock braking system.
C) Auto-bracing suspension.
D) Anti-breach security.

4 Playstation, Saturn, 3DO, CD32, Jaguar and Ultra 64 are examples of?
A) The next generation of computer game systems.
B) Code names for the latest action fighter toys.
C) Names of communications satellites.

5 Full frontal and offset frontal car accidents account for 60% of accidents causing injury or death.
True or false?

6 A recent report ranked Australia's top 100 grocery brands. The top selling brand by sales volume was found to be:
A) Kraft Cheese.
B) Coca-Cola.
C) Vegemite.
D) Kellogg's Cornflakes.

7 If you don't have private insurance the cost of a visit to a doctor, after rebates, is more expensive in the United States than it is in Australia. It is approximately:
A) Twice as expensive.
B) Five times as expensive.
C) Ten times as expensive.
D) Twenty times as expensive.

8 Ca is the chemical symbol for:
A) Carbon.
B) Calcium.
C) Cadmium.
D) Californium.

9 Glasses designed to correct myopia (short-sightedness) allow people to see:
A) Objects close to them.
B) Distant objects.
C) Close and distant objects.

10 If you buy something from a shop which displays a "no refunds given" sign, the trader does not have to refund your money if a product is faulty.
True or false?

ANSWERS

1. B. CD-ROM (Compact disk — read-only memory) allows programs, pictures, photos, animation and information to be stored on CD and accessed by a computer.
2. False. Softwoods and hardwoods were so named in the past when European timber merchants were exposed to only a few species. For example, balsa wood is classed as a hardwood, although it is actually 'soft' to handle.
3. B — see page 23 for more information.
4. A. Several companies have released or will soon release more powerful game systems, including the Playstation by Sony, Saturn by Sega, 3DO by the 3DO Company, Amiga CD32 by Commodore, Jaguar by Atari and Ultra 64 by Nintendo.
5. True.
6. B. Coca-Cola was the top brand by sales volume with $348.3 million worth of sales, according to the Neilsen Top 100 grocery brand listing. By contrast, the value of sales of Kraft Cheese was $142.5 million, Kellogg's Cornflakes $56.6 million, and Vegemite $49.7 million.
7. D.
8. B. Ca is the chemical symbol for calcium. Carbon's chemical symbol is C, cadmium's is Cd, and californium's is Cf.
9. B. Myopia means people can't see distant objects clearly. The eye is usually too long from the front to the back, so the image from distant objects falls short of the retina.
10. False. Traders who display "no refunds given" signs are in breach of the Trade Practices Act. It's illegal for sellers to attempt to include a clause in their conditions of sale that exempts them from liability for product faults and defects.

RECALLS AND BANS

If you find a recall or ban not on our list, please let us know. Companies often rent 008 or 1800 numbers for a couple of months after the recall is announced. If the number given is no longer operating, phone the manufacturer or retailer direct.

For all recalls from The Reject Shop return the item to your nearest Reject Shop for a refund.

The Reject Shop has recalled CHOO-C CAR DECORATIONS, as they contain small parts which may pose a choking hazard if given to young children as toys.

The Reject Shop has recalled SAFE DOUBLE DART GUN SETS, as these projectile toys could cause serious eye injuries.

The Reject Shop has recalled WOODEN TOY TRUCK TRAINS, as small parts could pose a choking hazard to children.

The Reject Shop has recalled WOODEN ABACUS TRUCKS OR BUSES, as small parts could pose a choking hazard to children.

The Reject Shop has recalled SUPER JET FIGHTERS, as these projectile toys could cause serious eye injuries.

The Reject Shop has recalled SANTA BAGS, as they don't have required perforations, posing a suffocation hazard to children.

The Reject Shop has recalled TUMMY TRIMMERS, as they have been banned in NSW (because they could cause eye and body injuries).

The Reject Shop has recalled INSTANT PORTAS WITH LUGGAGE STRAPS, as they don't carry a warning that the straps could rebound and cause eye injuries.

Franklins has recalled BABY DAYS SEAHORSE BABY RATTLES, as the rattling balls could pose a choking hazard to small children if the toy is broken. Return to the Franklins store from which it was purchased for a refund.

Toys 'R' Us has recalled 16" BARBIE BICYCLES bought between September 1, 1993, and December 2, 1994, which do not have a rear-wheel foot brake. Return models with no rear brake to your nearest Toys 'R' Us store.

Croner-Tyco has recalled DR DREADFUL REFILLS and the food component of DR DREADFUL FOOD LAB and DR DREADFUL DRINK LAB, as the jelly contains excessive levels of colouring (tartrazine) which could be a health hazard for susceptible individuals. Contact Croner-Tyco on 1800 644 564 (toll-free) for advice on exchanging the food component or refills.

Kawasaki Motors has recalled KAWASAKI MOTORCYCLES models ZX600E (ZZR600) (made in 1993 and 1994) in the vehicle identification number range JKAZX4E1*PA000019 — JKAZX4E1*RA023700 (the * digit will vary). The welding on the swing-arm may not be of the required standard, which could result in the swing-arm breaking in the welded area and subsequent loss of control. Return to your nearest authorised Kawasaki dealer for free replacement of the swing-arm.

International Trucks Australia has recalled ACCO E MOTOR TRUCKS produced since September 1, 1994, with a chassis number in the range A11100 to A11460, as the rear cab mount may not stay firmly latched. Contact any ITAL branch or ITAL dealer to arrange for modifications.

CHOICE

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We work on behalf of Australian consumers by producing and providing useful and accessible information, and representing and advancing their interests.
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